Amateur Radio

Volume 79
Numbers 1 & 2
January/February 2011
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Amateur Radio

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General

Technical

Columns

Our Cover: The VK3TXO fox hunt team, who won the Melbourne December fox hunt event, which was covered by the Norwegian production team from "The Golden Goal" television show. Read all about it on page 24. Photo by Robert Broomhead VK3DN.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

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Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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The world's oldest National Radio Society, founded 1910.

Representing

The Australian Amateur Radio Service

Member of the

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Registered Office of the WIA

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Editorial

Peter Freeman VK3PF

Happy New Year

Welcome to 2011 – we have finally ended the first decade of the century.

With the New Year comes the next round of field day/hamfest events. I try to attend such events when I have the time available, but travel adds significantly to that time. I do plan to attend the Centre Victoria RadioFest in Kyneton, even if it requires six or more hours of driving. I find the personal interaction with fellow amateurs makes the travel all worthwhile. And who knows, you may find a new or second-hand item that catches your eye. Or you may wish to attend one of the presentations on offer. The Central Coast ARC event at Wyong also offers such talks to pass information to newcomers or old hands on aspects of our hobby. Alas, I am unlikely to make it to Wyong, as for me the teaching semester starts at 0900 on the following morning, making it a little too tight time wise.

As I prepare this column, it is raining and another humid day. I expect the coming week will bring more of the same, as a system works its way down the east coast and interacts with troughs coming from the west. After a week of media attention on the floods in Queensland, especially around Rockhampton, the media are now giving saturation coverage (excuse the slight pun) of the events around Toowoomba, Ipswich and Brisbane. I am sure that all readers are thinking of those impacted and assisting in whatever way they can contribute. We certainly live in a continent which has weather extremes.

The downside of the warm, wet weather locally is to slow progress on the re-establishment of a radio shack at VK3PF. I have started to set up a room, with the radio gear on one side and the "study" on the other side. I have commenced the paperwork to gain the necessary permissions for erecting a tower and am considering my options of how to get the feedlines into the shack. The Nally tower support pole is at a local engineering workshop to be refurbished prior to replanting and I have purchased new winches for the tower.

All of this means that I am unlikely to be participating in the Ross Hull Contest, other than perhaps using contacts from the Summer Field Day contest. I will need to decide the manner of my participation in the Field Day – probably on a hilltop somewhere, perhaps for only a few hours? But first I will need to check the microwave transverters and find all the portable equipment.

A new production system for *AR*

On behalf of the Publications Committee, I welcome Sergio Fontana VK3SFG to *Amateur Radio*. Sergio has a long background in graphics design and has an excellent skill set that will be put to work in the layout of each issue of this magazine.

Sergio has been busy over the last few weeks, becoming familiar with our requirements, establishing contact with the printer and mail house and starting to layout some of the articles for this issue.

Hopefully all will go as planned, and all involved will move to our new arrangements. Regular contributors will already be aware of the new schedule of deadlines. I do hope that everyone was paying attention during last year and remembers the new submission arrangements for all content, be it a regular column, an article or just an item for Hamads. If not, you can always check the left-hand column on page 1 of each issue.

This issue is a combined January and February issue, with 64 pages of information for you to read. Next month, we will be back to the standard 56 pages. Until then.

Cheers,

Peter VK3PF

WIA comment

Michael Owen VK3KI

Many Places, Many People, Common Themes

November and December 2010 were very special months.

I visited Darwin, Adelaide, the Gold Coast, Brisbane, Rockhampton and Perth.

In Adelaide, Rockhampton and Perth, I attended meetings of clubs. In Darwin (apart from working with Darwin Club President Spud Murphy to organise the next Annual Conference, as we are now calling the Annual General Meeting weekend), I really had the same sort of discussion as I had with the clubs.

Basically, the theme at each of these meetings was the same:

- what the WIA was doing,
- the Centenary year and VK100WIA,
- the next Annual Conference,
- the financial pressure on the WIA without even a CPI increase since the subscription rates were set in 2004,
- the WIA's representation and advocacy role, including preparation for WRC-12 with Dale Hughes first in Geneva and then in Hong Kong,
- the WIA's representations to ACMA in respect of amateur transmitter power limits and the 50 – 52 MHz band, the changes to the LCD,
- the National Field Day and what could we learn from the first Field Day,
- this magazine *Amateur Radio*, and my inevitable plea for new members.

In addition, I was able to meet with many members of the various advisory committees, and hear their views and discuss their roles, particularly important as we try to put a new emphasis on their role by Mal Brooks, the WIA Manager, becoming their point of communication.

No, I do not want to turn this into some sort of minute of all of those meetings. What I want to do is to synthesise my overall impression of what came from those meetings.

One thing that struck was the very real support of the WIA by some clubs – the Rockhampton and District Amateur Radio Club asked me to present on their behalf a special medal that they had struck for members of the club who had been WIA members for 25 years. I was presented with a very handsome medal that had been produced by the Ipswich and District Amateur Radio Club, marking the WIA's Centenary year.

In Perth I presented the Jim Rumble Award for outstanding contribution to amateur radio in Western Australia by Heath Walder and Monique Faulkner – an award that had since 1977 been presented by the old WIA Western Australia Division, became a responsibility of the restructured national WIA and was revived by Christine Bastin and WIA Director Bob Bristow.

Wherever I went there was a general acceptance of the WIA's advocacy role, particularly at the ITU/APT/IARU level. The WIA's role was seen as important, and (as long as I didn't try to go into too much detail) an important reason for membership.

Another matter discussed at all these meetings was the National Field Day. Some common views emerged. Let's have it earlier, let's use things like IRLP so we can get reliable communications, and let's be better at communicating our message to people who know nothing about amateur radio.

One thing that really encouraged me was this: the support for the next AGM in Darwin on 27, 28 and 29 May 2011. That support by the Darwin club was probably the real reason why the Board chose Darwin.

But the support for going to Darwin by many people across the country was really encouraging. (I just hope that is translated into early registrations, as we will not be able to hold bookings as easily as we have in the past).

A gratifying issue was this magazine. It was seen as very valuable, and a number of clubs thought that they should contribute more about their own activities.

But of course, this is a case of success producing its own problems. Yes, everyone wanted the technical articles (though different people wanted the articles at different levels), everyone wanted up to date news and information, as well as their own club news. Why not just add more pages? Oh, cost. Obviously we need to cut down, but not any of the things we value.

What the WIA should spend its money on emerged in a number of different ways. More repeaters was one suggestion. Subsidising very small, otherwise non viable clubs was another.

Once people accepted (if they did) that the WIA did not have unlimited funds, deciding what to save money on was a bit hard.

Another message that was delivered in a number of contexts was that people will accept delays and understand that much of what we all do is done on a voluntary basis, and we just cannot be too demanding. But people will not accept just hearing nothing. They want to know what is happening.

If they have sent an email or letter to the office or to an individual, they want a response.

If they have sent an item for the magazine, perhaps about a club activity, they don't want it just not published, they want it acknowledged, and better, explained why it wasn't published.

Continued on page 4

WIA news

National Field Day 2011

WIA Director Philip Adams VK3JNI has announced details for the 2011 WIA National Field Day, with the event to be held on Sunday 17 April 2011.

Many operators participating in the 2010 event requested a change away from the October date. The suggestion to have the event close to IARU World Amateur Radio Day, April 18, seemed to provide a newsworthy story. The IARU have announced that the theme for the 2011 World Amateur Radio Day will be "Amateur Radio: The first technology-based social network", which the WIA has adopted as the theme for the 2011 WIA National Field Day.

Rules and guidelines will be announced shortly.

ITU-R SG5 Meetings in Geneva

Dale Hughes VK1DSH attended the Study Group 5 (SG5) of the International Telecommunications Union meeting in Geneva, 8 to 18 November 2010. He represented the Wireless Institute of Australia as part of an eight person Australian delegation. Other delegates were from various government agencies, broadcasters, and spectrum engineers.

SG5 deals with fixed and mobile communications services including the amateur radio service.

Among the agenda items covered at the meeting was WRC-12 Agenda Item 1.23 "Allocation of about 15 kHz in parts of the band 415-525.6 kHz to the amateur service on a secondary basis". WP5.1 undertakes the necessary engineering studies to demonstrate the compatibility of amateur transmissions with other primary users in the frequency range.

During the meetings a number of other issues that may affect amateur radio operations were also monitored.

WA Club Meeting

The first meeting since the restructure of the WIA of its affiliated clubs in Western Australia was held in Perth on Saturday 18 December 2010. Representatives of the WA Repeater Group, Hills Amateur Radio Group, the West Australian VHF Group, the Scout Communications Team, Ham College, WICEN West Australia and Northern Corridor Radio Group met with members of the WIA Western Australia Advisory Committee, WIA Director Bob Bristow VK6POP and WIA President Michael Owen VK3KI.

The WIA President outlined the current matters engaging the WIA, and raised a number of issues for discussion.

Each group then reported on its current activities and concerns, responding to some of the issues raised and a constructive discussion followed.

Michael Owen said that the meeting had been very useful, and that he hoped it would become a regular event, as it had become in South Australia and Queensland.

VK6RK New Awards Manager

WIA President Michael Owen VK3KI announced on 18 December 2010 at a meeting of WA clubs that the WIA Board had appointed Keith Bainbridge VK6RK a member of the WIA Awards Committee. The Board had acted on the advice of Chris Platt VK5CP, the WIA Director responsible for Awards.

The current WIA Awards Manager Eddie de Young VK4AN had advised the Board that he would not seek reappointment, and the Board has also appointed Keith as WIA Awards Manager. In accepting the resignation of Eddie, the WIA Board formally recorded its gratitude for his contribution to the WIA.

WIA Jim Rumble WA Amateur of the Year Award Presented

The Wireless Institute of Australia Western Australia Division created the Amateur of the Year Award in 1977. In 2000 the Award was renamed the Jim Rumble Amateur of the Year Award, in honour of VK6RU, a former President of the Division and the VK6 QSL Manager for an incredible 61 years.

With the restructure of the WIA in 2004 the national WIA took over the Award, to continue to recognise the Western Australian amateur making an outstanding contribution to amateur radio.

WIA Director Bob Bristow VK6POP, encouraged by Christine Bastin VK6ZLZ, resurrected the award. On Sunday 19 December 2010, at an informal barbeque in Kings Park, Perth, the Jim Rumble Award was presented by WIA President Michael Owen VK3KI to Heath Walder VK6TWO and Monique Faulkner VK6FMON.

Heath and Monique organised the collaboration of the various WA amateur radio groups to conduct the very successful Super Springtime promotion of amateur radio to the public in September and October 2010.

WIA comment Continued from page 3

If a club has lodged an application for a repeater or beacon licence, or the variation of such a licence, they don't want it all to just disappear; they want to know what is happening.

That message was very clear.

And so we have been talking about systems in the office to ensure adequate follow up.

Against this, many people went out of their way to acknowledge the people they saw as making a special contribution to the WIA. That included the WIA office staff, always friendly, and things happened, the contribution of Peter Wolfenden, and his historical articles, Peter Freeman as Editor. Another matter regularly the subject of favourable comment was the Media Kit.

I hope that in writing this Comment I have been able to convey to the many people who contributed to these meetings how valuable it all was, and how much I really appreciated their valuable input.

For me, to participate in all those meetings in all those places was a great privilege.

WIA news

Top End WIA Annual Conference
Details are now online for the next WIA Annual Conference, the annual weekend in May where the WIA AGM and Open Forum are held in conjunction with a range of activities of interest to members and their partners. Darwin has been selected as the venue for the 2011 conference. The weekend commences Friday evening 27 May and runs through till Sunday evening, 29 May.

The weekend program includes a sunset dinner at the popular Darwin Trailer Boat Club, a tour of Litchfield Park incorporating a BBQ lunch, the WIA Annual General Meeting and Open Forum, a Symposium titled Technology for the Bush which will include the Centre for Appropriate Technology and the annual WIA Dinner. The weekend will be capped off with a Sunday evening visit to the Mindil Beach Sunset Market which is being arranged by members of the Darwin Amateur radio club.

A special accommodation rate incorporating breakfast for two is available from the Travelodge Mirambeena Resort in Darwin, the host site for the weekend activities.

Members are urged to register now and to book their accommodation with the Mirambeena Resort.

Look for menu item "WIA Annual Conference Darwin" under the "About the WIA" tab on the WIA home page.

Hong Kong APG Meeting
In December 2010 the Asia Pacific Telecommunity, the APT, which is the regional telecommunication organisation that covers the ITU's Region 3, held another of the series of meetings intended to develop common positions among Region 3 administrations to the agenda items for the World Radiocommunication Conference to be held in Geneva in the early part of 2012, WRC-12.

A member of the Australian delegation, providing a specialist amateur contribution, was Dale Hughes VK1DSH, nominated and paid for by the WIA.

Zone 29 Award

Keith Bainbridge VK6RK
vk6rk@wia.org.au

The Zone 29 Award is offered by the Wireless Institute of Australia, to all licensed radio amateurs and SWLs throughout the world.

To qualify, the following conditions must be satisfied:

1. Establishment of two-way communication with any 25 (twenty-five) different amateur stations located in Zone 29. Only contacts made after 0800 UTC on 1 January 1980 are valid.
2. The total of 25 different stations may be obtained by operation on one or more of the authorised amateur bands, as applicable at the time of the claimed contact. Cross-band contacts will not be accepted.
3. Any type of emission as permitted by the local licensing authorities at the time of the claimed contact may be used. Cross-mode contacts will not be accepted.
4. Applications containing multi-band and multi-mode valid contacts will be accepted but the award will be issued with no endorsement.
5. Special endorsements, as listed hereunder, will be displayed on the Award certificate, where applicable, when all valid contacts fulfil the following conditions:
   a Single Band Multi Mode
   b Single Band All Phone
   c Single Band All CW
   d All Phone Multi Band
   e All CW Multi Band
   f All Digital Multi Band
   g Multi Mode Multi Band
6. Short Wave Listener applications will be accepted and the Award certificate issued, with appropriate endorsements as applicable, when all conditions listed above are met.
7. QSL cards are not required as proof of valid contacts but the application must show that log extracts have been examined and verified by two other radio amateurs or the Awards Manager of the applicant's IARU affiliated radio society.

   A simple declaration that the applicant's station has conformed to all licensing regulations as related to his operation is mandatory.
8. The fee for the Award shall be $10 (Aust) or 5 (five) IRCs for overseas stations.
9. Essential information required will include:
   Callsign of Station Worked / Heard, Band (MHz), Mode Used, Date / Time (UTC)

Standard-form application sheets are available.

Applications should be addressed to:

Award Manager, Zone 29 Award,
P.O. Box 204, Bassendean
Western Australia 6054

A polarity protection circuit using a power FET

Dale Hughes VK1DSH

Some time ago, I had the unpleasant experience of applying reverse polarised power to a radio and then having to repair it. Since then, I usually install polarity protection in any equipment I make or buy so that mistake cannot be repeated. There are a number of commonly used ways to add polarity protection: a series or shunt diode, or a diode and relay that will supply power only when the supply is of the correct polarity. The components are inexpensive and virtually eliminate equipment damage if the supply is reverse-polarised.

Having recently acquired a new radio, I wanted to add polarity protection; but what is the best method? The simple series diode is effective, but it adds a small voltage drop, of 0.2 to 0.7 volts depending on the type of diode, that may be of concern depending on battery capacity. The diode-relay combination is also good and has been my preferred option, but it increases current consumption which is something I wanted to avoid in this case.

A very neat solution was found in an RSGB[1] publication that used an enhancement mode P-channel power FET to provide an effective polarity protection scheme. Figure 1 shows the schematic diagram; the power FET is used as a switch that will only pass current when the correct polarity voltage is applied. It might appear that the P type FET is connected in the wrong way with the drain electrode connected to the positive supply, however the drain-source 'channel' is essentially bi-directional and the only thing that matters is the polarity of the gate-source connection, and in this case the gate has to be more negative than the source for the device to fully conduct. This configuration is necessary so that the parasitic drain-source diode of the FET is of the correct polarity – otherwise the parasitic diode would pass current when the polarity was reversed and the protection scheme would be useless. Note that current will flow through the parasitic diode in this configuration, even if the gate is not connected, but the usual diode voltage drop will occur. Switching the FET on ensures a forward voltage drop of only a few millivolts.

The FET (Q1), a TO-220 device, has a current rating (ID) of 88 amps, a breakdown voltage rating (VDSS) of 55 volts and a very low 'on' resistance (RDS(on) < 0.018 ohms). This results in a very robust circuit that will tolerate short circuits without damage, adds negligible voltage drop and dissipates very little power – making it ideal for the protective application.

Photo 1: Shows a photo of the completed unit.

An optional Zener diode (D1), or other transient protection device, can be fitted to provide limited over-voltage protection. Such devices usually fail to a short circuit when subject to sustained over voltage; this will rupture the fuse and protect the attached load.

The unit was built into a small diecast box with terminals for the battery supply and a polarised connector for the radio supply – this reduces the possibility of accidentally bypassing the protection circuit. Photo 1 shows the completed unit.

Reference 1: Technical Topics Scrapbook, 1990 to 1994, page 235. Pat Hawker G3VA. RSGB.

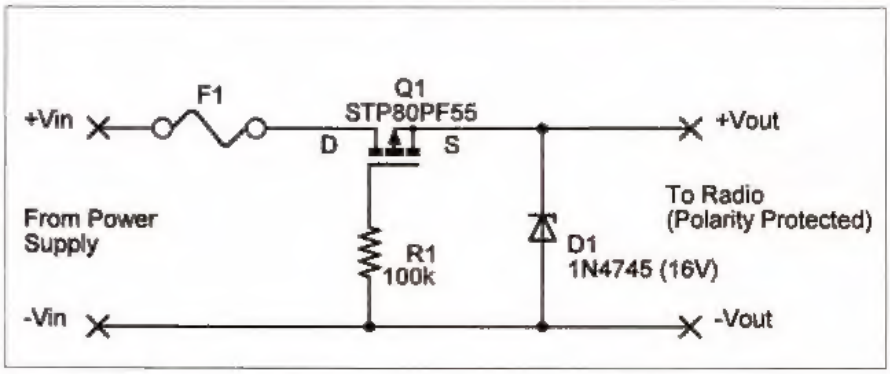

Figure 1: The schematic diagram of the polarity protection circuit.

An introduction to antenna modelling

Ron Sanders VK2WB
ron.kiama@gmail.com

If you are interested in seeing the characteristics of an antenna system, without actually building it, a modelling program such as EZNEC will provide enough information to allow you to decide whether it is suitable for your requirements. This is particularly true for a wire antenna, where space restrictions may prevent an ideal layout. I have chosen EZNEC as it is probably the easiest program to use.

This article is intended for beginners to amateur radio and will refer to the free demonstration version in sufficient detail to make a start with a simple antenna. The program divides antenna radiating elements into segments which are used to build a representation of the overall current distribution along the element. The more segments you use, the better the result. In the demonstration program some outputs are restricted to 20 total segments whereas the full (paid) version allows 500.

Some data has an asterisk (*) in places to show results when using 100 segments.

A search on the internet with the word 'EZNEC' should get you to Roy Lewallen's (W7EL) homepage which has the latest version (currently EZWDemo50Inst.exe) for downloading.

The EZNEC main screen is shown below. On the File dropdown list select the file Bydipole.ez. This file uses units in feet (ex USA) and I have left it that way to simplify the following explanation. After you are familiar with using it you will probably want to change to metric units.

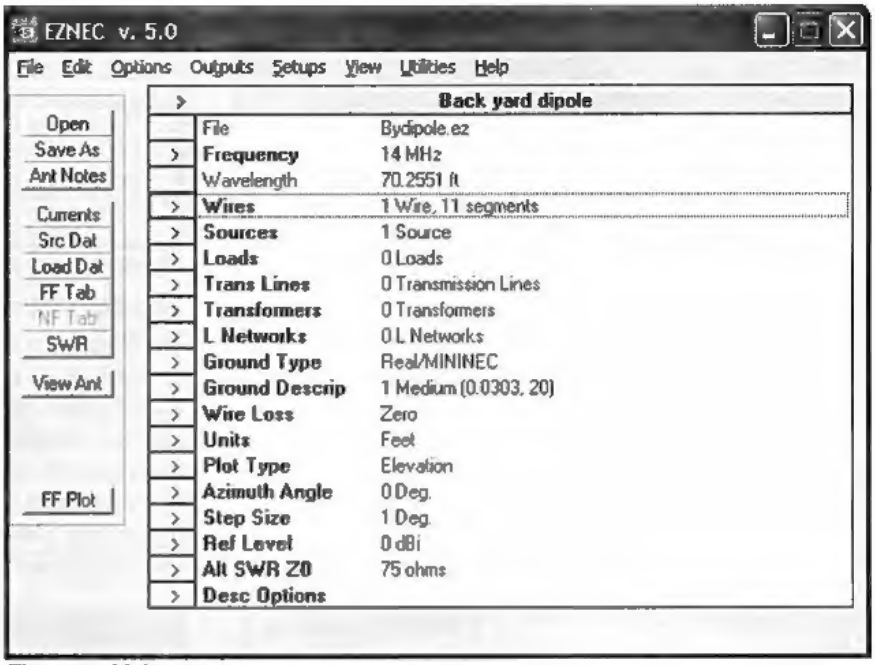

Figure 1: Main screen.

[Results are included in metric in the text. It is simple to change from imperial to metric units – simply click on Units from the main screen. Ed].

The main screen shows > pointing to each data item. By clicking on >, a separate screen appears which allows you to enter or alter data relating to that item. The buttons listed down the left hand side carry out operations and display the results.

The screen shown is for a dipole with the following characteristics: **Frequency** - 14 MHz, which consists of **Wires** -1 wire, 11 segments, **Sources** -1, **Ground Type/ Description** – Real, 1, **Wire Loss** – Zero, **Units** - Feet, **Plot Type** - Elevation, **Azimuth Angle** - 0 Deg, **Step Size** - 1 Deg, **Ref Level** - 0 dBi, **Alt SWR Zo** - 75 ohms.

Let us look at some of the data screens.

Wires

In EZNEC all straight elements are referred to as Wires even though they may be tubes – as in a beam. The dimensions of each wire can be specified in various units and the physical location of each end is given by 3-dimensional (x, y, z) co-ordinates. If you have an antenna with a bend you would specify 2 wires with Wire 1 End 2 joined to Wire 2 End 1. For now we will only use the example provided.

This shows a 33.43 ft [12.29 m], #12 AWG [2 mm] wire, 30 ft [9.14 m] above ground made up of 11 segments.

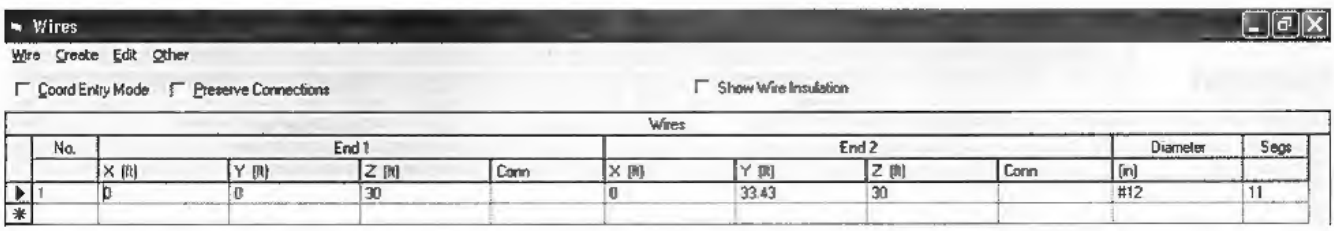

Figure 2: Wires screen.

Sources

A source consists of a voltage or current source located along a wire.

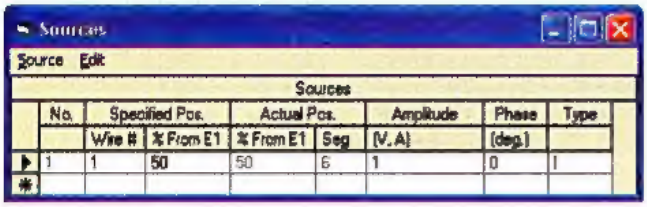

Figure 3: Sources (I) screen.

This is a current source (Type I) located in the middle (50%) of Wire1 and has an amplitude of 1A at 0 deg.

The remaining data screens provide choices for each parameter and are self explanatory.

Some of the output screens

View Antenna

This display shows the 3-dimensional layout of the antenna as described above. The options panel on the left allows manipulation of the plot and by hovering over the wire or segments additional data is displayed.

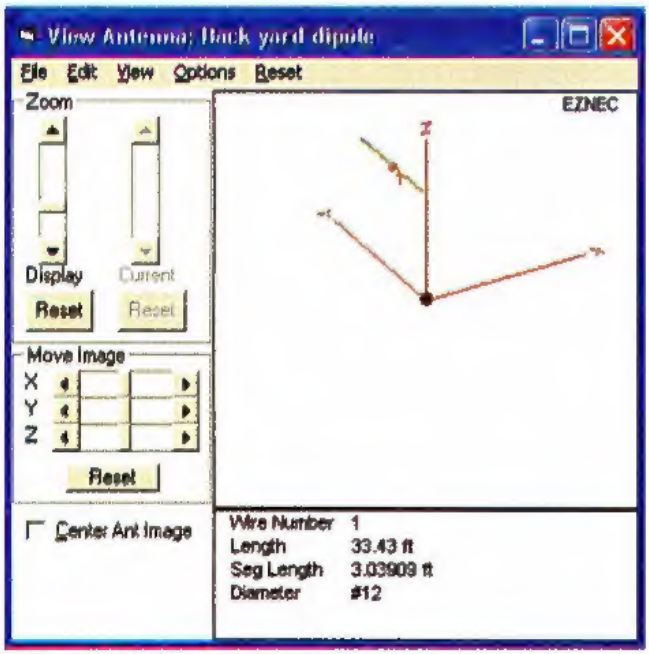

Figure 4: View antenna screen.

Currents

Shows the Connections, Current and Phase for each segment along the wire. Note that the current source is as specified for segment 6 (centre of wire), 1 A at 0 deg and the current decreases symmetrically as you move towards the ends (* segments 1 and 11 = 0.02171 A at – 4.74 deg).

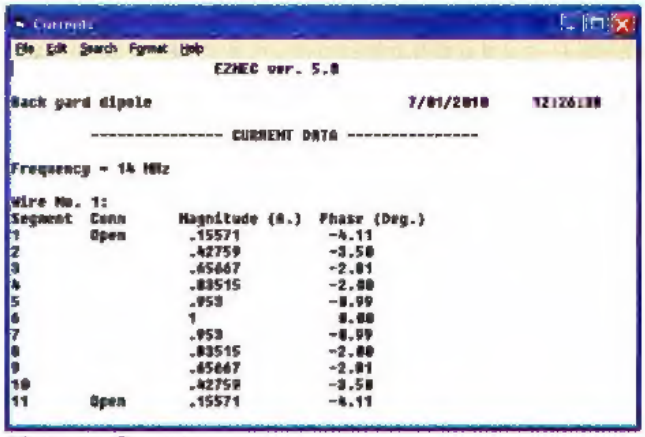

Figure 5: Currents screen.

Src Dat (Sources Data)

The Source Data shows that the Impedance of the antenna at the source is 79.16 – j45.07 ohms (* 78.63 – j44.08 ohms). [Where j = √-1 and is used to quantify the reactive component of impedance. Ed]. With a 1 A source the power into the wire would be 79.16 watts. The SWR is shown for 50 ohms and the Alt SWR Zo of 75 ohms. Notice that SWR is better for a 75 ohm system, so we will use it from here on.

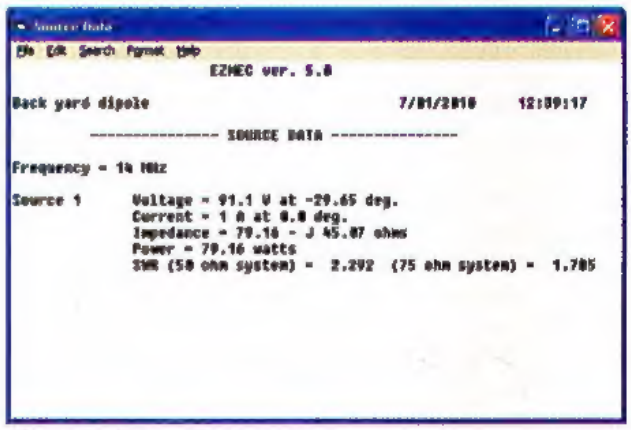

Figure 6: Source Data screen.

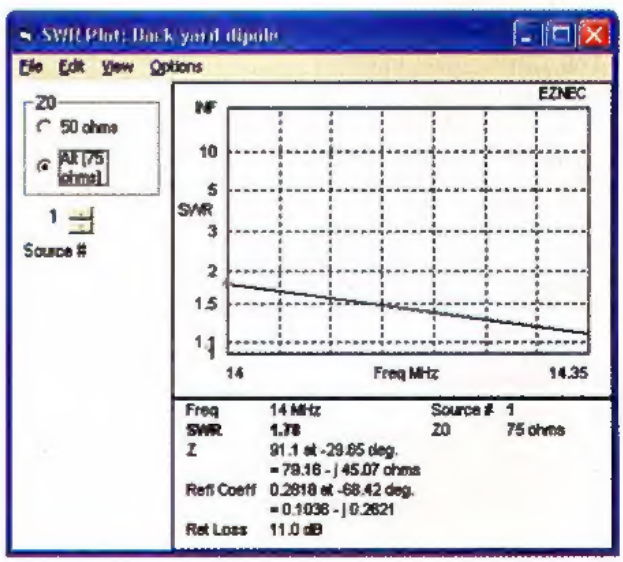

Figure 7: SWR screen.

SWR

In the initial dialog for SWR, I sweep from 14 to 14.35 MHz in steps of 0.05 MHz, and plot for a Zo = 75 ohms. From the plot it appears that the SWR is getting better at the higher frequency, so we can assume that the wire is too short for the 20 metre band.

By lengthening the antenna (Wire 1) to 34 ft [10.36 m] and running SWR again we can see that the SWR is now lowest near the centre of the 20 metre band – right where we want it.

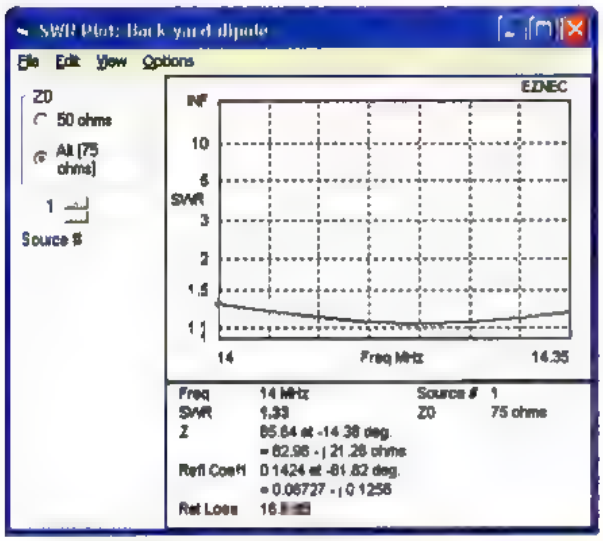

Figure 8: SWR screen for the back yard dipole.

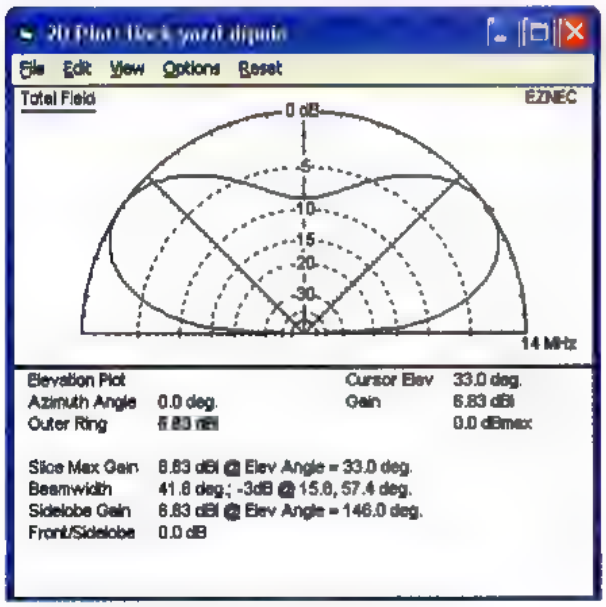

Figure 9: FF plot elevation.

FF Plot (Far Field Plot)

The **Plot Type** is selected as Elevation at an **Azimuth Angle** 0 deg. **The Ref Level** is specified on the main page as 0 dBi, so the plot shows the maximum radiation (gain) to be 6.83 dBi @ 33.0 and 146 deg Elevation.

Now select **Plot Type** as Azimuth at **Elevation Angle** 33 deg, which was the elevation for maximum gain in the previous plot. This shows that maximum gain occurs at 0 and 180 deg and is 6.83 dBi, and minimum gain occurs off the ends and is 7.89dB below maximum.

Figure 10: FF plot azimuth.

Adding a Transmission Line

A real antenna must have a feeder to connect the transceiver to the feedpoint. The Trans Line screen allows you to place the connection point on the wire, enter the length (40 ft) [14.58 m], Zo (75 ohms), and Velocity Factor (0.7) and Loss for the particular cable selected. Since the 75 ohm feeder has replaced the source, we have to re-locate the source to the far end of the transmission line. The new location is named V1, denoting a "virtual" location with respect to Wire 1. These new screens are shown below.

In EZNEC a transmission line connection is shown as a **T** in a square box. This replaces the Source, which is now moved to its new location, shown as V1 at the end of the transmission line. These changes are now shown in **View Ant** below.

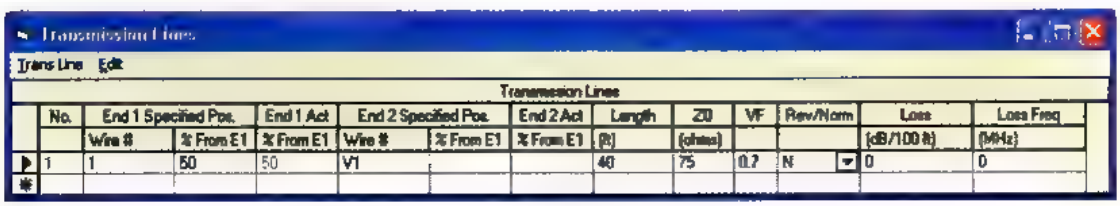

Figure 11: Transmission lines screen.

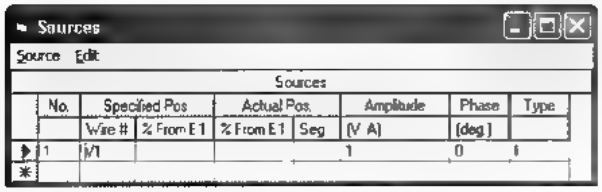

Figure 12. Sources screen (2).

Additional Input Data

EZNEC allows you to add extra elements, matching networks, stubs and transformers to make a complete antenna system. The Help menu in the program shows how to add these more complex operations, and should be the reference for all operations.

Conclusions

After the transceiver, the antenna is the most important item in the amateur station.

For this reason I hope some of the new licence holders will find this article interesting, as it combines computer use with the design of a real antenna.

Finally, do not forget, you *cannot* make contacts via a simulated antenna – you actually have to build it and get on the air.

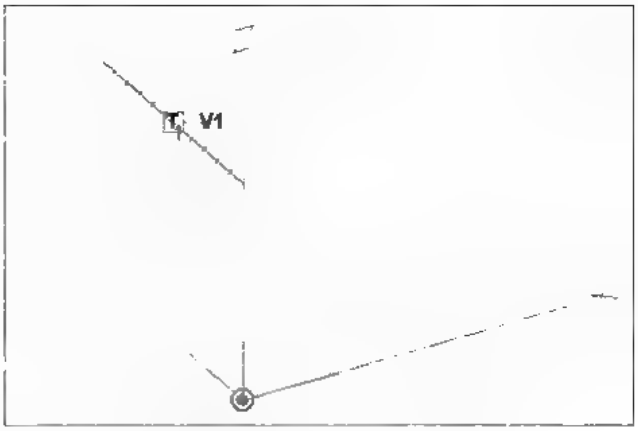

Figure 13: View antenna screen (2).

Notes

The author wishes to thank EZNEC author Roy Lewallen W7EL for his permission to feature EZNEC® in this article.

(A production issue delayed publication of this article in the December issue. Ed.)

VK7news

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Regional Web Site: *http://reast.asn.au/*

Miena Hamfest 2010

What a fantastic day this was. Hosted by the Central Highland Amateur Radio Club of Tasmania (CHARCT), the day saw over 150 people attend. There were some great raffle and door prizes donated by our wonderful sponsors who included: TTS Systems (Dave and Chloe), TET Emtron (Mark), P.K. Antennas (Peter) and Active Electronics. There were many stands of pre-loved equipment including a stand manned by John VK1CL all the way from VK1. A big thank you to Marilyn VK7FMAZ and her band of merry caterers in the kitchen and the crew on the BBQs, and a big thank you to Dave VK7OB and all the members of the CHARCT who a ways put on a great day.

The last few months have seen many visitors to VK7 and one notable OS amateur was Johnny Tan 9M8DB, who the author met for coffee. Johnny is from Sarawak in Malaysia and was attending his daughter's graduation in Hobart. Johnny is active on the SEANET (14.320 at 1200 GMT).

Scott VK7HSE let me know that he has upgraded the Southern APRS IGate to now serve as a Tier2 service. The Tier2 identifier is T2TAS (formally VK7HSE-JS).

Miena Hamfest – REAST Stand showing DATV and HPSDR (Photo. VK7FTCL).

Miena Hamfest – Central Highlands of Tasmania (Photo. VK7FTCL)

Status page can be viewed at *http://tasmania.aprs2.net:14501/* or *http://150.101.108.109:14501/* (if DNS doesn't resolve) and the site location map can be viewed at *http://f5vag.nerim.net/php/map_t2.php?server=T2TAS*

Northern Tasmania Amateur Radio Club

The NTARC Christmas BBQ saw about twenty people venture to Myrtle Park and even visitors from the NW in Max VK7KY and Shirley VK7HSC, who donated a beautiful hand-made wooden fruit bowl and cake stand, which will be raffled off at the AGM in February. The fishing was good with Barry VK7BE catching four fish for the evening! A quick reminder to NTARC members that membership fees are now due. We also congratulate Hayden who has upgraded to an advanced licence and is now VK7HA.

Cradle Coast Amateur Radio Club

Please note that 2011 starts with the New Year Dinner at the Bass and Flinders Motel in Ulverstone on February 5. Please let President David VK7EX know if you will be attending.

North West Tasmanian Amateur TeleVision Group

The SSTV Gateway on VK7RTV has been upgraded and is now running the SlowScan TV.net application. The gateway has been moved to the MS.Net framework and will be evaluated over the next few months. It can be accessed on 145.625 MHz for local SSTV users.

WICEN Tasmania (South)

Roger VK7ARN let me know that the end of year 2010 WICEN lunch was well attended with thirty WICEN South members and guests attending. It was great to see so many XYLs, Geoff VK7GW and XYL Jenny from NE VK7, REAST representatives with XYLs and committee members of the Southern Tasmanian Endurance Riders

During the lunch, Ossie Owens, President of the Southern Tasmanian Endurance Riders presented WICEN Chairman Chris Webb VK7FCDW with a certificate of Appreciation awarded to WICEN for commitment and dedication to supporting equine endurance riding, through the provision of radio communications for safety and rider tracking.

Radio and Electronics Association of Southern Tasmania

The REAST 2010 end of year celebration saw about 30 people enjoy BBQs, in both the afternoon and evening sessions. We welcomed Leigh VK7FLAR one of our recently successful Foundation licence holders – congratulations. We also congratulated the following upgrades: Scott VK7HVK, Tony VK7VKT, Roger VK7HT and Roger VK7ALA.

REAST members will be receiving their membership reminders in the mail in the near future. 2011 callbooks have arrived and are available from Clayton VK7ZCR at the Caltex Service Station, corner Main Road & Amy Street Moonah.

OTY Coaxial cables

Reading the article about separating coaxial cables from Hank VK5JAZ, I was reminded of things taught to me when I learnt about amateur radio.

As a young boy, I used to separate the braid using a sharp-pointed tool.

Around 1960, a tradesman taught me that the appropriate tool was either a file-card or a stiff wire brush. The time needed is decimated, as is the damage to the cable.

I am surprised to read, 50 years later, that this lesson is still not taught.

Duncan Eales VK3LQ

Cheap as chips

Nigel Andrews VK4FNA

There is no doubt that in our modern world of amateur radio a microprocessor or microcontroller of some sort is incorporated in most of the electronics we use. More and more we see homebrew designs utilising microcontrollers, ranging from simple tasks such as programming a PLL, adding a digital display or using an encoder to select frequencies to more complicated designs using DSP and advanced data communication.

Recently I came across a development board which uses a ST microcontroller in their STM8S discovery board. What attracted me was the price; all up, with controller (STM8S105C6 – see *www.st.com/mcu/devicedocs-STM8S105C6-113.html)* and USB interface it only cost a shade above $11.00 and included free delivery if ordered online (*v* – PN 177-525101)

This development board allows you to connect just about anything to it such as an LCD display, to measure voltages, generate sound and program PLLs – it is quite a powerful little micro that clubs could use in their next project. The board is supported by a full programming environment and can be downloaded on the ST website along with free C compilers which will compile programs up to 16 kB in size (the free version) – enough to drive most small projects.

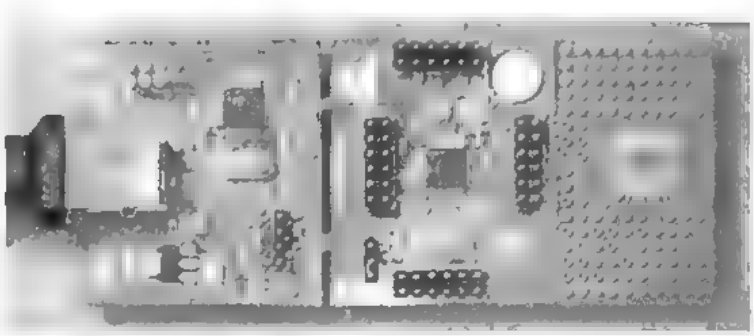


Photo 1: The STM8S development board.

The only drawback, as with all microcontrollers, is the need to know and understand programming and whilst not impossible for most it simply is not for everyone.

Downloading firmware is quite easy as the software is free and the board uses a USB port to do this. It also came pre-programmed with a flashing LED program with touchpad control which you can modify and make do other things.

Not everyone's cup of tea but if you have a friendly programmer nearby it can make a great addition to that next project and maybe help others learn a bit more about the world of microcontrollers.

JOTA weekend October 2010

Eddie Tomes VK4TJE

As part of JOTA 2010 the Scout Leader of the Birkdale Scout Troop, Ian Perkins VK4YIP conducted the investiture of two Cubs into the Scout patrol, by radio.

Ian took a handheld radio and strolled off into the leafy grounds of Karingal Scout Camp while the patrol were still taking part in the JOTA event, ably assisted by the Bayside District Amateur Radio Society, who have been providing JOTA assistance for over 25 years at Karingal Scout Camp, Mt Cotton, Kindilan Guide Camp, Redland Bay and at the 1st Bay Island Guides. Then, a radio call was received on the VHF set in the shack. The assisting leader called the patrol to order and the investiture took place as the last radio activity for the weekend. Ian explained that he liked to make the movement from Cubs to Scouts a special occasion.

Photo 1: VK4WST holding the microphone.

The Scout leader from the Birkdale troop was Ian Perkins VK4YIP, and the radio operators for the weekend were Tom VK4TY, Victor VK4WST, Mark VK4FMWR, James VK4HJB, Darrell VK4HDC and Eddie VK4TJE. HF, VHF and UHF radios, a HF receiver, two linked Morse keys and some construction were provided. The Scouts did their part by being an attentive, eager and very pleasant group with whom to be associated, and we look forward to many more events with them.

Photo 2. The induction

Contesting for beginners

Alan Shannon VK4SN

Contesting grew out of other amateur radio activities in the 1920s and 1930s. As transoceanic communications with amateur radio became more common, competitions were formed to challenge stations to make as many contacts as possible with amateur radio stations in other countries. Contests were also formed to provide opportunities for amateur radio operators to practice their message handling skills, used for routine or emergency communications across long distances. Over time, the number and variety of radio contests has increased, and many amateur radio operators today pursue the sport as their primary amateur radio activity. Reference: Wikipedia.

Many newcomers have populated the contest bands since the introduction of the Foundation Licence. It is excellent to hear more calls and increase the fun of contesting.

The international contests normally run over a 24 or 48 hour period. Starting on a Saturday and finishing the following Monday is a very long time to sit on a radio. Some operators stay up overnight and put in a grand effort, but over a 48 hour period, many will find that multi operator is a better choice for them. I, for one, like my sleep!

A good place to start is short, single band, single operator contests. There are many local VK contests that run for one or six hours. One hour contests are normally referred to as sprints.

If you are not really confident to kick off on your own, then I am sure any contesting amateur you ask will let you drop in and let you watch and get some useful operating tips Any contest group would welcome you. Join them for a weekend and more than likely you would get a go on the radio and guidance would be forthcoming, even if you did not ask. Most Aussie contests are fairly casual, and you can just call or answer calls at your leisure to get into the swing of things.

Simply contact as many stations as possible during that period of operation. A list of VK contests, including dates and times, and some rules are found on the www.wia.org.au website. There are a few short VK contests for P29, VK and ZL stations. 80 metres is commonly used and the VK/Trans-Tasman contest even includes a 160 metre category. Other contests include all bands, except for the WARC bands, and run over a Saturday and/or Sunday.

Before making your first QSO, there are certain things you must do. Well, you do not have to, but prior planning prevents poor performance. And if it is your first time, it is good practice to have a system check over.

1. Select the contest you would like to enter and read and understand the rules.
2. Check your radio for operation. You may have lent your ATU to someone and forgotten to get it back.
3. Check the antenna is resonant on the frequency of operation.
4. Decide whether to use a logging program or manually write the log.
5. If you are using a computer for logging, make sure you have the latest version of software as last minute rule changes or point scoring may have been updated in the software.
6. Check the logger program serial connection to the radio is working if you want automatic frequency and mode logging.
7. Check the rules for start time and have a bottle of water nearby to keep the vocal cords lubricated.
8. If you have decided to hand write the log, draw up a log sheet with information already known to save time during logging. The consecutive serial number that you give out can be written in. Most signal reports are 59. No-one seems to care that you may be 57. 59 is easier and normally pre-entered in logging software. Cater for 80 to 100 contacts if you are going in a sprint/one hour contest.

A contester may wish to hand log and enter details in the logging software at a later time. If you are not familiar or quick with a keyboard or the software, then this is for you. Typing directly into logging software is for those confident on a keyboard and with the software in use. Most loggers allow post entry of contacts.

Most contests include an exchange of RS(T) and a sequential number starting at 001.

A typical exchange may take the following format.

1. CQ contest this is VK4SN
2. VK4SN this is VK4FJ
3. VK4FJ you are 59003 QSL? (VK4FJ is VK4SN's third contact)
4. Roger QSL 003, you are 59004 QSL? (VK4SN is VK4FJ's fourth contact)
5. Thank you. CQ contest de VK4SN
6. And so on...

If you are really serious and want a quick exchange, the exchange might go like.

1. CQ contest VK4SN
2. VK4FJ
3. VK4FJ 59001
4. Thank you 59003
5. CQ contest VK4SN
6. And so on

Logging software

There are many logging software programs around to try. SD LOGGER by Paul O'Kane EI5DI http://www.ei5di.com/ is one, W3KM Logger by Dave Mascaro http://mysite.verizon.net/dmascaro1/ another.

In my opinion, VKCL Logger is the only option for VK contests. Refer to the following website to download the program (http://web.aanet.com.au/~mnds/). N1MM and Writelog are well known and proven loggers for the international contests. I have a preference for N1MM, probably because the look and feel suits me and it is easy to setup. It is certainly complex but is a well written masterpiece, in my opinion.

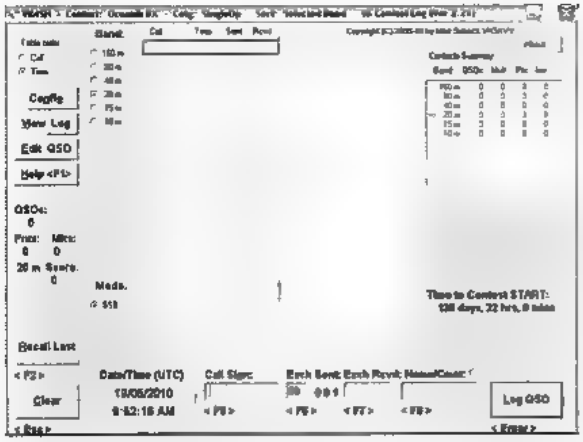


Figure 1: A screen shot from the VKCL logger program.

So, you have selected a VK contest, and VKCL as your logging program. Once the contest is selected from the setup window this screen appears in VKCL Logger. The big white area is the 'logbook' and along the bottom are the entry windows. Remembering the call example above, when you hear the stations call sign it is typed into the call sign box. You then press Enter to take you into the received exchange box, where you type the number given. Pressing Enter again logs the contact and clears the entry boxes ready for the next entry. After the contest, click on 'View Log' and save the log book to a file. This file is then sent to the relevant email address as an attachment. This information is found in the rules of the contest sheet. Remember that there is a help icon in the program window which will explain how to use the logger. I have merely given a brief description here.

Notice the version number in the title bar. V2.19. Always check the website to see if there is a later version. If there is, download and install over the top of the existing one.

Operating principles

So far we have looked at the basics and given a general idea on the format of contesting and are assuming the equipment used for the contest is your shack as it is now.

Let us look at the finer details for smooth operation of the contest. Imagine you are sitting there with a hand microphone, pencil and paper or, worse still, a keyboard instead of paper. Try holding a microphone in one hand and trying to type, one fingered, or write on a piece of paper that wants to run around the desk! Not a good way to start. Items that will help with contesting are a headset with microphone and a foot switch for PTT (Push to talk). Using VOX instead of a foot switch is fine as long as you are on your own. For multi operator stations VOX is disastrous as the operator next to you is probably a screamer and will trigger the VOX on your radio. Using a headset and foot switch allows two free hands for accurate logging.

A computer headset microphone will not function on your radio due to impedance mismatch. Heil headsets are the preferred choice of contesters. Two types of microphone insert are available and a choice of three different headsets is available. These are not that cheap, especially the Pro-Set. Once again the top of the range is aimed at the professional contester, with noise attenuation of 40 dB keeping out the loud operator next to you and allowing good reception and concentration racking in the DX. The cheaper headsets are just perfect for single operator home stations.

Antennas

For starters you are probably already set up for 80 metres. A horizontal antenna is best for VK contacts although a vertical will suffice, but is more aimed at DX work rather than local. A half wave dipole is probably the most common setup with the average ham but a full wave loop on 80 metres has more gain, if you can fit it in the back yard. These antennas have a high angle of radiation making them perfect for VK/ZL communications.

Logging calls

As per the example above, calling CQ contest and logging an exchange seems easy enough. What happens when two or more stations reply to your call? You may not get a complete callsign due to stations on top of one another and you hear only the last letter of a call Rather than call again, your reply could be 'station ending in Zulu – again'. Only the station whose call ends in Z will come back to you. This is a quick way to eliminate all the stations coming back to you again. Sometimes a call can be incorrectly logged, so it is a good idea to have a scrap pad next to you to make quick notes so as to fix the log after the contest.

A low signal station and/or effect from large static crashes are examples of hard to get calls. Many a request for the callsign or serial number may occur. Using correct phonetics is essential as that is what you will be listening for. So many stations make up their own phonetics making it hard to grasp a name. The only exception I have experienced is for overseas contacts, where the use of country names can be an advantage due to accent or pronunciation differences with the standard code. Repeating a call or number three times in succession will help.

In Summary

Remember:

- Keep the contest date free.
- Read and understand the rules.
- Confirm your radio and antennas work on the intended band/s.
- Decide on the method of logging.
- Update your software if using a logging program.
- Headset is at the ready.
- Foot switch is connected or you are working VOX.
- How to log each call in the logger.
- How to save the log file.
- How to attach the log file to an email.
- Email the log to the contest manager even if you think it's not worth it. At least the log can be used as a check log.

Starting with VK contests is a good place to start and build up your confidence and operating skills. It is also a good way to become familiar with your radio, how your antenna performs, and propagation.

Hope to hear you on air.

VK3news

Geelong Amateur Radio Club - The GARC

Tony Collis VK3JGC

Spring Field Day

Photo 1: The Team ALB Caravan at Mt. Leura.

Take 1

Team VK3ALB/p again ventured out to Mt Leura, Camperdown, for the Spring VHF/UHF Field Day contest. The team consisted of Lou VK3ALB, Nik VK3BA, Peter VK3APW, Jenni VK3FJEN and Michael VK3FMIC. This time the team was greeted by fine weather after having survived less than ideal conditions on the last few events. They operated on all bands to 3 cm except 3.4 GHz and included 6 m for the first time. Highlights included S9 contacts into Mt Gambier on 5.7 GHz and 10 GHz, using Peter's new 10 GHz system (233 km). The team finally worked VK2KRR on 1296 MHz at a distance of 480 km. They also had the opportunity to contact Tim VK3JTM on his new 5.7 GHz system and Ken VK3AKK on his 5.7 GHz, in his "Rover" capacity. An enjoyable weekend was had by all and they are looking forward to the microwave challenge in 2011.

Take 2

The Lara UHF and Microwave Exprimentors Group (LUMEG), as VK3UHF, was again active in the Barrabool Hills about 13 km west of Geelong; in grid square QF21cu. Those involved were Ken VK3NW, Charlie VK3NX, Chas VK3 PY, and David VK3QM.

On this occasion the team operated all bands from 50 MHz through to 47 GHz, a total of 10 bands. This was the first time that 47 GHz had been used in a VK Contest. During this period the President of the GARC Dallas VK3DJ and Gerhard VK3HQ visited the group but did not participate in the actual operating.

Photo 2. Jenni VK3FJEN operating.

The overall perception was that participation appeared to be up for the Spring Field Day, especially on the microwave bands. It was particularly pleasing to work VK3YFL for his first ever contact on 10 GHz. They also worked VK3JTM, who has recently added 5.7 GHz capability to his station. LUMEG would like to express their thanks to VK7MO/p3 who also put in a large effort to activate QF30, and work from several other grid squares during the contest on 2 m, creating considerable interest for all participants. The team was very comfortable with their score.

The best DX achieved was VK2FABV on 2 m and VK1DA and VK7JG on 2 and 70. Apart from those there were no particular "stand out" contacts this field day, with the exception of 47 GHz where our longest contact was 30 km with 5 by 3 both ways with 150 µW and 25 dB horn antenna at both ends.

The Photo below shows, from right to left, the 47 GHz, with horn antenna, and the dishes for 24 GHz (30 cm), 3.4 GHz (60 cm), 10 GHz, 5.7 GHz and 2.4 GHz (1.2 m).

Photo 3: Field Day set up showing the array of microwave dishes with the 47 GHz horn far right.

Take 3

Ken VK3AKK/p operated alone in a roving mode covering the four grid squares: QF11, QF12, QF21 and QF22; on 2 m, 3.4 GHz, 5.7 GHz, 24 GHz and 47 GHz.

Ken's operating window was from 0900 to 1200 on the Sunday morning, setting down for roughly 20 minutes at each of the four grid squares to make contacts. During that three hour period, he managed to score some 2,400 points. The plan at the next contest is to be active on all 10 bands.

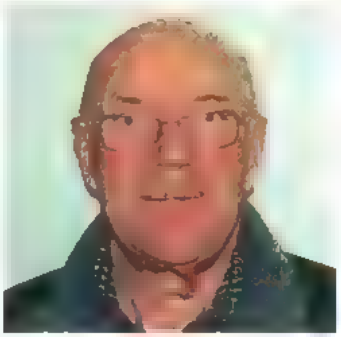


Photo 4: Ken VK3AKK.

VK3news

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ

We at the GRES are fortunate enough to be able to start the new year off with a clean slate. This has been brought about by the huge effort put in by members during 2010.

Due to fund raising during the year mainly in the form of selling scrap metal, and sale of valves, our outdated radio equipment has now been updated. A new Icom IC-7000 transceiver has been purchased together with a new antenna tuning unit.

This new transceiver has been installed in a new console, and will not only be used at the club rooms, but it is envisaged to also make use of it on field days. To complement this new addition, a triband beam has been installed complete with rotator. For the lower HF bands a new G5RV antenna has been erected. We have also been lucky enough to obtain a new dual band 2 m/70 cm FM transceiver, and a dual band vertical antenna has been erected for this new rig.

A new APRS repeater was commissioned during the year, and a refurbishment of the WICEN repeater in our care is scheduled for early in the new year. Our computer laboratory has had a complete overhaul. This consisted of scrapping our slow out moded machines and replacing them with newer, faster, secondhand machines.

A new server has also been put into operation. The club web page has also undergone a facelift, and also includes a list of valves we have for sale.

So for anyone restoring either old mantle radios or boat anchor equipment, and cannot find a particular valve, it may just be listed for sale on our web page at vk3anr.org. Also at this website is a short history of our club, and our museum at the Old Geelong Gaol.

Visitors are always welcome to call in and see us. Club meetings are held each Thursday evening, commencing at 2000 hours local time. The address is 237A High St. Belmont, at the rear of the Belmont Community Youth Club.

The rooms are also open each Wednesday morning from about 9.30 am till noon. This is when our "older" members congregate to work on club projects and have a coffee and a chat. Our computer group meet on the 1st and 3rd Friday of each month.

This is a non structured self help group, where computer problems are solved. Visitors to Geelong are also reminded to call in and see our museum display at the Old Geelong Gaol. Admission to the gaol also includes entry to the museum and is open on weekends and school holidays.

VHF/UHF – An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

Welcome back after the summer break.

Compared to last summer, this season started very slowly, possibly due in part to the odd weather we have been experiencing. Up and down the east coast, we have had LOTS of rain and the weather in Melbourne has been very mild, apart from a one-day scorcher on New Year 's Eve.

All were waiting expectantly for another bumper year of Sporadic E, but there has only been a little activity on this front so far. I am writing this on January 4, so still lots to happen, I hope.

Back to November, on the evening of the 24th, a 3-day tropo opening formed from the east coast to ZL. On the VK side, VK4OZ, VK2DVZ, VK2ZT and VK2KOL were involved, while ZL3TY and ZL1IU held up the NZ side. No contacts were made above 2 m.

Early December was fairly quiet. On the evening of the 7th, VK2AH and VK2BCC worked across to ZL2OK on 2 m.

On December 19th, Nick ZL1IU had a busy time with what was most likely a Sporadic E opening. Between 0635 Z and 0730 Z, he worked VK2DVZ, VK2KOL, VK2BCC, VK2BLF, VK2TS, VK2MER, VK2DAG, VK2FAD, VK2ZTV, VK2PC, VK2ZT and VK2AMS – all on 2 m. Signals were reportedly quite strong at times, sometimes dropping out, so Sporadic E is strongly suspected.

On December 29, a more widespread Sporadic E opening formed between VK3/5 and VK4. FM stations from all over were pounding into Queensland. At about 0310 Z, VK3GHZ worked VK4OE and VK4OX. VK4OX also worked VK3DUT and VK7AC. At about 0535 Z, VK4KAY worked VK5AKK, VK5GF, VK5ZK, VK5BC/P and VK5LA. VK4BZP also worked VK5AKK and VK5ZK.

At about 0600 Z, it was the turn for Melbourne stations. John VK4FNQ was about the only opportunity and was S9+ for nearly an hour working many stations. Nick VK4FMAG on Magnetic Island also appeared briefly, working several VK3 stations. In the meantime, "nearer" VK4 continued to work into the Adelaide area. The opening continued until about 0830 Z.

On the morning of December 31, good tropo conditions were present up the southeast coast. Rex VK7MO worked Steve VK2ZT on 70 cm SSB.

On the evening of January 3, another Sporadic E opening occurred between VK2/1 and ZL. At 0510 Z, VK2ZT worked ZL1IU. Others also worked in the brief opening that only lasted 15 minutes or so. By 0845, the opening resumed but with the cloud shifted favouring a different path. VK2DO worked ZL3AAU and ZL3NW, then went mobile to work ZL3NW again and ZL3ADT. VK3DUT to ZL2TAL and VK2ZT to ZL4LV. VK1KW worked ZL3AAU, ZL3JT, ZL3ADT and ZL3NW. At 1005 Z, VK3EK worked ZL2TAL after which the propagation closed.

Throughout December, the VK6REP 2 m beacon has been heard from time to time in the Melbourne area. Unfortunately, there seems to be a shortage of active 2 m weak signal stations in the Esperance area and no contacts have been made. The Albany beacons are both currently off the air, so no indicators are available from that area. Derek VK6DZ to the west of Albany has recently become active and is trying a bit of digital mode operation which is good to see.

Spring Field Day

Quite a few stations went out and braved the glorious conditions for the Field Day.

Peter VK3TPR reports on a somewhat challenging day:

Had a great time on Arthur's Seat with Mike VK3KH. However, it got very windy about 4 pm, the sea breeze was close to a gale until about 7.30 pm. My dish and 10 GHz transverter blew over, over the guardrail and was heading down the slope.

When I climbed over and started picking it up, it looked OK except a piece of hardline was ripped from its SMA (regular problem for me) but I could not see the FT-817 anywhere! It had slid off in the dirt and long grass and appeared a bit dusty when I finally found it.

Managed to do a re-setup after a while when the wind dropped and with the tripod tethered to the wagon tailgate hinge and Michael's spare piece of coax managed to work VK3UHF and VK3ER although with the distortion problem on SSB both contacts were made on FM.

I also worked VK3HZ and VK3MQ at Johns Hill Reserve, so I am counting four contacts on 10GHz - five including Rex VK7MO's JT65 from QF30. It would have possibly been a couple more if the wind was not so strong. Michael had some initial cable/connector problems on 10 GHz trying to work Rex at QF30, so he did not set up at Arthur's Seat until after the wind dropped and I was working VK3UHF - he also worked VK3UHF on 10.

I worked Rex at QF30 at signals of -25 and -16, Rex told me later by email that it was knife edge refraction of up to 10 degrees to make the contact.

We had a pretty good contest overall, 2.4 GHz was quite productive and we logged a modest number on 2, 70 and 23 cm and a couple on 6 metres so we were happy except for the strong and cold wind. Everyone else we gather was basking in warm sun.

Bryon VK3YFL, pictured on next page, was operating his 10 GHz system for the first time from a

Photo 1: Byron VK3YFL set up to operate 10 GHz

location to the north of Melbourne, and managed a few good contacts with it.

Chas VK3PY joined the VK3UHF team for another enjoyable Field Day outing. He reports:

What a fabulous event the Spring FD turned out to be for us. The weather, for once, was absolutely perfect. All our equipment worked as expected with no dramas, and we had a ball with the microwave bands. Who'd have ever thought we'd make well over 80 contacts on the microwave bands (2.4 to 47 GHz inclusive)?

A real buzz was seeing the VK3NX and VK3QM 47 GHz gear in action. Another highlight was being at the other end of Bryon VK3YFL's inaugural 10 GHz contact. More than 200 km on his first shot in anger, and his signal was huge.

Yet another pleasant surprise was working Rex VK7MO/P in QF30 (southern tip of Wilson's Promontory) on 10 GHz. Rex had announced his intention prior to the contest, but when we set up our station at the usual QTH on "our" hill we discovered the farmer had left a combine harvester strategically parked a couple of hundred metres away, in precisely Rex's direction. Hmmmm....what to do? The most expedient solution was to take David VK3QM's "spare" 10 GHz system to a spot a little further south of the main station where it would have a clear view towards Wilson's Promontory. We needn't have bothered. When Rex came up he was a VERY big signal on both rigs. Maybe combine harvesters are transparent at 10 GHz!

I hope that participants elsewhere had as good a time.

Andrew VK1DA/VK2UH was another to experience a few challenges during the Field Day. He writes:

I think this FD may be a turning point for my field day efforts. First the site. Mt Ginini used to be virtually bald apart from grass, over a circle of about 100 m surrounding the compound fence. You could drive around to any part of the perimeter and decide on whatever corner you wanted to use. The North West corner was the favourite of Ed VK1VP, who I accompanied on quite a few field day efforts up there. That corner is now much less useful as the forest has grown taller and now you'd need a 10 m or higher mast to get above the tree tops for best microwave performance. The foliage is not being prevented from growing partly because ACT Forests have fenced the hilltop, preventing cars from accessing all but one side of the rectangular compound. So plenty of foliage is growing around the other three sides of the compound. Hence I only operate from the southern face of the compound, which is close to where the 146.95 repeater is located. To put distance between my antennas and the repeater, I usually set up about 30 metres from the compound. To the north east there is almost the same level of foliage as on the NW corner. Due north is the compound fence and even the top of my 6 m mast is only just clearing the compound fence. So my path to the Bathurst and Orange area is problematical. These all make for a less than ideal site for ordinary field stations like mine.

There are other much better local sites, like Mt Coree, which being mainly rock at the top probably won't have the foliage problem for a long time. But that is no longer practical to drive to with an ordinary passenger car like mine, you do need much more agile cars for those sites.

Second my gear. I arrived at the site and unpacked the antennas from the roof bars only to find that my 2 m Yagi no longer had a reflector element. I searched through my stuff but could not figure out a way of using other materials like

stiff coax, to replace the reflector (reflector later found in the grass at home, split in two pieces, apparently broken when I retrieved the antenna from its temporary storage location, overgrown with grass). So I operated the weekend without a reflector on the 2 m antenna. I got the impression that the forward gain and directivity were only slightly different from normal. The F/B ratio was shot. This is convenient in some ways as I was able to hear NW and SE almost as well, whether the antenna was pointed in either direction. The directivity of the antenna in the rear half of the pattern was quite different from normal. And for the first time in some years of operating there I got some serious interference from the gear in the compound, with a mixing product producing highly distorted fuzz, modulated slightly by 6950 repeater audio, at S9 on 144.190. This may have been partly due to lack of antenna directivity, or even due to corrosion in the antenna. Such things often occur in the presence of strong signals.

However looking at the antennas I have been using for FD work I do realise that the time may have come to replace them. There is considerable corrosion on the connectors (N sockets) and this is probably due partly to the antennas being stored outside for 51.5 weeks of the year, without caps on the connectors. The rear feed on the 432 MHz antenna is a rotten system because it means there is a lot of stress on the connector of the feedline. It's much better in my view to be able to tape or Velcro the feedline to the boom.

My 1296 antenna setup is also quite inferior to what it could be with only minor effort in either building or acquiring higher gain antennas and feeding them with better cable (currently CNT400). This weekend I did try to use two Yagis with a home made power splitter even though it had been measured and found to have a higher than desirable input VSWR. I thought this might not matter much with a 6 m length of CNT400, and in fact the IC-910 did indicate almost full output power was being delivered, however the performance was quite a bit down on past years. I could not hear anything of the VK3RGL beacon on 1296. Though I worked Gavin 3HY it was with somewhat more difficulty than in the past, and a contact with 3ER, even with the splitter taken out of circuit and using a single yagi, took 20 or 30 minutes to complete (on CW - SSB was out of the question). And while VK1PWE near Batemans Bay was good strength on 144 and 432, he was undetectable on 1296 both with and without the second Yagi, and I knew he had worked up the coast to some Sydney area stations on that band. So was this caused by conditions or problems in my antenna? My impression was that conditions on the higher bands were quite depressed compared with past events. The Sydney beacons were not as strong as usual except on Saturday night and I heard nothing of the Mildura 2 m beacon.

I did hear more people than I worked but once again some of the problem is caused by continuous contacts being made on the so called "calling frequency" and it is simply not possible to make contacts with DX stations, let alone ask them to QSY, when you are competing with the mass of QRM caused by these contacts, which are between you and the DX. We need to stop operating in these contests as though we have been all allocated a single frequency to use. And yes I also made some contacts on 150, but there is no other choice when CQ calls on other frequencies produce no replies, giving the impression that everyone is apparently queuing up on 150 as if it's an FM repeater (it's a band, not a channel).

I was pleased to have made contacts on 2.4, 3.4 and 10 GHz with Ted VK1BL, who went up to Mt Ainslie in Canberra to make it happen. Signals on 2.4 were very good, quite good on 10 GHz despite beaming through the trees and I was receiving well on 3.4 but in the reverse direction it was necessary to use CW to complete a contact. These contacts were made while Ted was using the usual dish feed on 2.4 and 3.4, but without the dish.

Thanks to Dale VK1DSH who lent me his 10 GHz station and to Ted VK1BL who lent me his "second" 3.4 GHz station for this event. And full marks to Dale for arriving back from Geneva via London on Sunday morning and getting on the air within 30 minutes to hand out some contest numbers. Amazing!

Peter VK3Q reports on the microwave activities of the VK3ER team :

Our conditions on Saturday afternoon didn't seem as good as for those stations nearer to the coast line, as further inland at "Mclaughlin's" Lookout (which averages 120 km from the coast), we could not hear the Mt Gambier boys on any band with any decent signal.

It was interesting to monitor the four main beacons on 1296:

VK3RXX in Burwood was the usual 59+ (over a distance of 100 km),

VK3RLP at Langwarrin was 59 but a bit up and down,

VK3RGI at Mt Carrajung was a steady 57 all the time,

VK5RSE in the SE was inaudible until 8 am Sunday when it came up to S3 for an hour or so.

Strangely, late on the Saturday evening, conditions came up on 10 GHz and we had a fantastic QSO with Ralph VK3WRE with S9+ sigs over a distance of 220 km.

We had the feeling that there were not as many stations about over lengthy periods this time around, so fewer repeat QSOs.

Our score will probably be a little down on this time last year

6 m was hopeless to interstate North, although we still managed 10 grid squares - no sporadic E at all.

It seems since the Spring Field Day was moved closer to the solstice, the Sporadic E has been scared off!

It was a disappointment to not work Ken 3AKK on Sunday morning, but it was abundantly clear that Ken needed more height to make it north to us on the higher bands, as the west end of the Brisbane Ranges, around Steiglitz, are just that little too high and wide in Ken's direction.

Nevertheless, it was a good weekend with good weather and a chance to blood a new operator in Steve VK3QW, in the

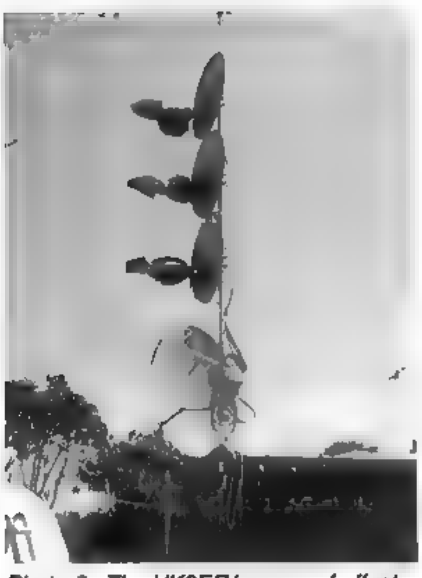


Photo 2: The VK3ER/p array of offset dishes for microwave operation.

ways of VHF/UHF propagation in VK3 (he being an ex VK6!)

A special thanks to Andrew VK1DA who persisted with 1296 CW on Sunday morning. Just at the critical time, one of the microswitches in the rotator control box decided not to work, so the dish would not turn back and forth. Strangely, the bumpy ride back seems to have dislodged whatever was stopping the switch from working.

Photo 2 shows offset 700 mm dishes for 3, 5 and 10 GHz (top) with 3 watt DEMI transverters mounted on the foldout arms of the dishes. Special high-tech weather proofing of the transverters, courtesy of Glad.

Finally Colin VK5DK reports on the VK5SR group activities:

The South East Radio Group were portable on our usual hilltop "The Bluff" (QF02GG) and conditions were only average, which is reflected in our score of contacts on all bands.

The wind was extremely strong on Saturday afternoon and evening causing our 1.2 m dish to blow over causing damage to the centre of the dish and damaging the short cable from the feed to the transverters. This dish was used for 2.4 GHz, 3.4 GHz and 5.7 GHz. We used a 1.8 m dish for 1.296 GHz which worked quite well and were able to work into Melbourne (400 km) with reasonable signals.

Apart from these problems, Saturday evening was extremely cold and windy and as a result contacts were few and far between.

It would be nice to be able to work 10 grid squares from this location, but geographically it is a tall ask as we are situated where the only activity is to the east and a maximum of 5 grid squares only worked, with only VK5ZK worked in VK5.

There have been discussions between a few serious VHF/UHF/microwave operators about having the scoring system changed to distance-based rather than grid square based scoring, as the present system favours areas that are able to work grid squares in all directions. A scenario was discussed where an opening to ZL on 144 MHz produced a new grid square and a very good contact, if a second station was worked in that same grid square it is worth the same points as working an FM station 25 km away.

The 160 metre Coffee Break Net

John Fisher VK3DQ/VK3ARK

Yesterday, after some delay, I was delighted to take up a long standing invitation to visit 'The Checkinmeister'. The Checkinmeister is Roy VK3ARY who runs Melbourne's 160 metre Coffee Break Net, which operates on 1843 kHz using amplitude modulation at 11 am Monday to Saturday. Roy is the net controller from Monday to Friday with other members of the net taking turns on Saturday.

Photo 1: 'Uncle Roy' calls for check-ins.

Roy usually appears on 1843 kHz at about 1040 am and tunes up his system with the magic 'hellos', that is, using the word hello to check his modulation levels. After this 'Uncle Roy' calls for 'Checkins' for the net and normally about a dozen stations participate each day. The net runs for approximately one hour, and has been running for a number of years and become a Melbourne institution.

Roy operates a number of radios from his collection of superbly restored and home brew equipment, which includes a solid state class E transmitter designed by Drew Diamond VK3XU, who is a regular on the net offering helpful advice and tips. A number of participants use Drew's shortened top-loaded vertical, which is a simple solution for a restricted space antenna for 160 metres and makes it simple to have a 160 metre station in a small backyard. Both the Class E transmitter and the 160 metre antenna have been featured in past copies of *AR*.

The members of the 160 metre net hold an annual lunch and this year saw a large crowd in attendance. A number of people brought along their home brew gear for show and tell; however you do not need to have home brew gear to join the net. Most commercial equipment will be okay but be aware that most modern equipment only provides about 25–30 watts output in AM mode, so a suitable amplifier, whilst not a requirement, is a help.

Also a number of country stations are able to join the net when conditions permit, including Luke VK3HJ from Benloch, near Lancefield, Eric VK3AX who is a regular from Emerald and a number of stations operating from portable locations from time to time

So please consider popping up for a coffee break on 1843 kHz AM and be part of this Melbourne institution.

New Microwave Records

Several new microwave records have recently been set:
13 cm EME record: VK3NX to CT1DMK, 17678.7 km (13 Dec 2010).
13 cm Digital Modes record: VK3KH to VK3XPD/5, 390.3 km (11 December 2010).
5.7 GHz Digital Modes record: VK3XPD/5 to VK3ZQB, 162.5 km (12 Dec 2010).

Congratulations to all involved.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur VK7MO

Almost new digital record

A "nearly well done" to Derek VK6DZ and Jim VK3II in almost completing a JT65 contact over a distance of 2497 km which would have been a new 2 metre national digital record. This was Derek's first attempt at JT65 and unfortunately he did not know the terrestrial reporting procedure as necessary to complete a QSO and claim the record. Nevertheless, Derek and Jim did exchange callsigns both ways a -8 and -15 dB. Derek's QTH is west of Albany with a not-too-good take-off and he was using only a 6-element beam and 10 watts. As you may expect, Jim has now given Derek some coaching, so be ready to work Derek on JT65 next time there is an opening to VK6.

FSK441

Welcome to Robert VK4LDH and Dave VK4KSY who have been trying out FSK441 on 2 metres.

JT65

Good to see Ross VK2DVZ is again active on JT65.

ISCAT

The beta version WSJT9 includes a new mode called ISCAT, short for ion-scatter. It was designed primarily for six metres where it can take advantage of both the meteor pings (which are longer than on 2 metres) and the weak background ion-scatter signals On a weak and continuous ion-scatter or tropo-scatter signal, it works down to around -20 dB and on one or two second meteor pings it can work down to -9 dB. The program does averaging, so it does better with short messages where it can average a number of times. Tests show it also works well on 2 metres meteor scatter and while it is more sensitive than FSK441 which works to around +2 dB, it does not do as well as FSK441 on short pings of less than a second. Thus FSK441 still has the edge on 2 metres. ISCAT has been shown to also work well on 10 GHz aircraft-scatter due to its ability to cope with rapid Doppler shifts combined with reasonable sensitivity and the ability to decode the short bursts of a second or so that occur with what is believed to be specular reflections that come as "glints". You can adjust the Tx/Rx period to either 30 seconds or 15 seconds by clicking on the time period at the bottom of the WSJT screen. The 15 second period seems preferable for microwave aircraft scatter as this allows a contact to be completed in the short period that an aircraft is within the beamwidth of the antennas.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au

The Magic Band – 6 m DX

Brian Cleland VK5BC

This summer's Es season was a little slow to start, about two weeks later than recent summers. It was patchy and variable late November early December with several dead days but the band really warmed up with excellent openings all around VK/ZL in late December early January.

14 November: opening from northern VK2 and southern VK4 to VK5 and VK3, Neville VK2YO worked Brian VK5BC and Garry VK5ZK and Brian worked Chris VK4HJ. Denis VK4ACE worked Kevin VK3WN and Mike VK3XL. JA1RJU reported hearing John VK4ZJB near Gympie calling CQ.

15 November: Brian VK4EK in Sapphire reported working several northern VK7s including Joe VK7JG, Norm VK7AC, Frank VK7DX and Norm VK3DUT. Dennis VK4ACE also worked Kevin VK3WN in Ballarat and then Brian VK5BC, Colin VK5RO and Garry VK5ZK. Not to be left out of the action several far northern VK4s including David VK4ZDP, John VK4FNQ and Gary VK4ABW worked Willem DU7/PA0HIP. Joe VK8VTX in Darwin reported hearing the VK4RBP repeater and David VK4ZDP reported the Darwin VK8VF beacon.

Not much happened in the way of openings during the Spring Field Day contest except on Sunday morning 21 November: Hauke VK1HW worked Steve VK5AIM and Keith VK5OQ both portable near Kulpara in the Hummocks. The same day saw the first Es opening across the Tasman to South Island of NZ. Bob ZL3TY, Rod ZL3NW and Peter ZL4LV all worked into VK2 and 3.

24 November: Garry VK5ZK worked Chris VK4HJ.

The long anticipated 6 m activity from the ZL8X DXpedition occurred on 25 November and they had no sooner put their beacon on and they were heard and then worked on CW by Bob ZL1RS, good work Bob. The morning of the same day saw an opening from VK4 to VK5 with Brian VK5BC working Phil VK4FIL and Brian VK4DDC.

November 26 saw the first Es opening for the season to VK6 with Brian VK5BC and Mal VK5MH working several stations including Peter VK6KXW, Andy VK6OX, Kevin VK6AB, Igor VK6ZFG, John VK6JJ, Graham VK6RO and Barry VK6ZSB. The opening occurred mid afternoon and lasted for 1.5 hours with all signals S9+. Early evening the same day the VK8RAS beacon in Alice Springs was S9 into VK5 and Greg VK8GM was worked by Jeff VK5GF, Brian VK5BC and Garry VK5ZK. Great to hear activity from the Alice.

The first opening to New Caledonia was on 28 November when Pascal FK8IA worked several VK2s including Brad VK2QO, VK2GJC, Steve VK2ZT and John VK2FAD. The same day ZL2WHO worked several VK4s as far north as Gary VK4ABW near Townsville, south to Brian VK4DDC Gold Coast.

Early morning 8 December: Victor made his first appearance this season into VK working several VK2, 3, 4, 5 and 7s. Victor was S9 in VK5. Next morning 9 December, the band again opened early to Victor E51CG from VK3, 5 and 7 but not quite as strong as previous day. Same day Pascal FK8IA and Remi FK8CP worked many VK2 and VK4 and then a little later VK5ZK, VK5BC and VK5GF. Great to see some activity from FK8 this season. The day also produced a very strong opening VK5 – VK2 with VK3 and 7 to VK5 contacts on backscatter and an opening from VK2 and VK4 to VK8 (Darwin) and VK6.

8 Dec also saw the first appearance from the ZL8X DXpedition in VK. They worked several VK2 and 4s, as well as Steve VK3ZAZ and Garry VK5ZK. Gary VK4ABW also worked them on 9 December.

12 December saw good openings from both the Darwin and Alice Spring areas. Richie VK8RR, Mark VK8MS and Stui VK8NSB in Darwin and Greg VK8GM in Alice Springs worked several VK2, 3 stations as well as Brian VK5BC, Jeff VK5GF and David VK5AYD in Coober Pedy. Greg VK8GM also worked Rick VK6XLR in Geraldton.

14 December: another interesting day because although there was not a lot of local Es, during the afternoon Willem DU7/PA0HIP worked several VK4s from Brisbane to as far north as Townsville, ZL3JT on SSB (Willem's first SSB contact to ZL) and Richie VK8RR and Mark VK8MS in Darwin. Richie and Mark also worked several JA stations.

Meanwhile Bob ZL1RS was experiencing some interesting propagation across the Pacific and submitted the following:

So far this season's significant DX for me has gone like this:
07 Dec 04:52 to 05:40 - DU7/PA0HIP, DU1GM
08 Dec 05:39 - JH6VXP
11 Dec 01:00 to 01:30 - K6QXY, K6QG heard only (also a trace of N5TSP)
14 Dec 01:20 - K6QXY heard only
15 Dec 04.59 - KG6DX (Guam)
16 Dec 04:09 - JA6YBR beacon heard
21 Dec 01:20 - K6QXY heard only, AC4TO heard extremely weak
23 Dec 23:14 to 00:40 - OA4TT (weak, but consistent signal)
25 Dec 01:34 - N5JEH
02:30 - K6QXY
26 Dec 01:54 to 02:25 - N5JEH, N5TSP, AE5B, K5RLA, N5BLH, W5OZI

As you can see, the 01:00 to 01:30 UTC slot is very active here.

The equipment here is an IC-756pro + Acom1000 Amplifier and a pair of 6 element G0KSC LFA Yagis at 25 ft and 40 ft.

Rod ZL3NW has also worked K6QXY and the DUs, and Chris ZL2DX has heard K6QXY at much better RST than I have, but is limited by his location to QRP so was not heard in California. ZL3TY has also worked DU.

Good work Bob, just shows it does not have to be at the top of the sunspot cycle to experience some very interesting conditions and contacts on 6 m.

Willem DU7/PA0HIP has continued to work into VK most afternoons during December and it is great to have somebody so keen and looking for contacts into VK most days. It is remarkable how consistent is the path from the Philippines.

26 December also saw a good opening from VK6 to VK5. Remi FK8CP worked several VK6s including Andy VK6OX, Graham VK6SIX, Wally VK6YS and Peter VK6KXW and late in day Willem DU7/PA0HIP worked VK5BC, VK5KC and VK4BKP.

Rick VK6XLR reports the following:

I finally made it outside VK on 6 m. On 1 December 2010, though a very brief opening, worked Willem DU7/PA0HIP.

A great New Years Day, with 20 contacts from 0422z-0905 Z. VKs 1,2,3,4 and 7. Also ZL1 and ZL2. Thanks to Kerry ZL2TRY for my first ZL.

Well done Rick.

Steve VK6VZ reports:

I got started on Es again on 26/12/10 at 0656 Z with a SSB contact with VK5ZK (Goolwa). This piqued my interest and on 29/12 recorded SSB QSOs with VK5PO (1117 Z), VK5BC/p (1157 Z) and VK5CZ (1223 Z). The following day promised much to the north with the VK6RSX beacon in Dampier booming in at S9 and CW contacts with VK4DB (0013 Z) and VK4ABW (0021 Z) in Townsville and SSB with VK6BHY (0415 Z) in Karratha, but the prop didn't extend much farther here. On 30/12/10 so far (at 0400 Z) it is back to listening to band noise again.

Using 100 W here with an Elecraft K3, with a Softrock SDR off the first IF and CW Skimmer/Rocky software as a bandscope, and a 5-element Cushcraft Yagi antenna at 23 metres.

Good to see you active on 6 m again Steve.

The New Year saw some great conditions across all of VK and ZL. On 2 January, Kevin VK0KEV Macquarie Island was S9 into northern VK7 and was worked by Norm VK7AC and John VK7XX. Andrew VK3OE and John VK4ZJB also managed to complete contacts with Kevin. On 3 January, Chris VK5CP holidaying on Lord Howe Island worked many VK2, 3, 5 and 7s.

Please send any 6 m information to Brian VK5BC at *briancleland@bigpond.com*

Golden Goal fox hunt

Jack Bramham VK3WWW
WIA ARDF Coordinator

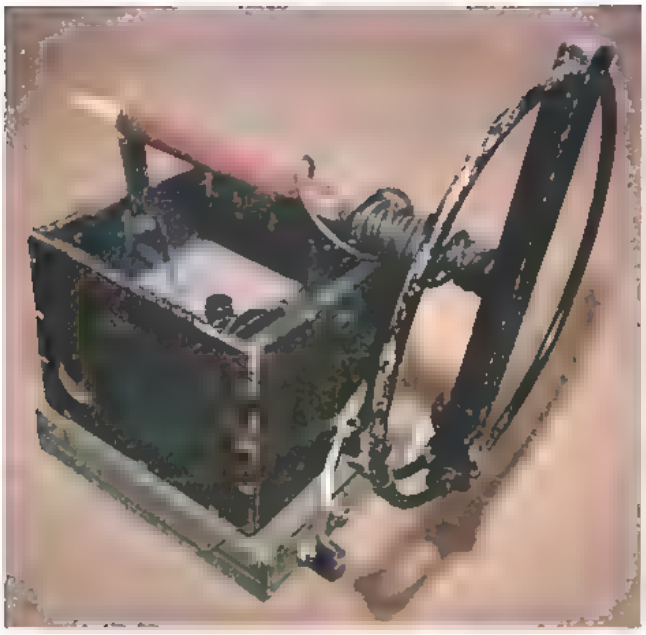
The VK3TXO Foxhunt Team, who achieved first place on the night.

Some months ago I was checking my email and I received a forwarded message from one of the ARDF Group members regarding Foxhunting in VK2.

This message was from a Norwegian Television show called "The Golden Goal", which is part of the Rubicon TV Network out of Oslo. I explained to the enquirer that most of the regular ARDF and Foxhunting activities are in Melbourne and Victoria, but they still asked if I could find an event to attend in VK2. I then sent an email off to a club in VK2 that I knew had been active in the past in regular foxhunting.

After a couple of weeks the Norwegian contact asked how the hunt was going, I explained that there was no reply from VK2 and suggested again that VK3 was where the most activity is located. They must have gone off and had a think about it and came back with the comment "we are now coming to Melbourne, can you arrange an event for us to attend". I gave them some options and they suggested that the foxhunt on December 10 suited them perfectly. I then explained that an ARDF event would be far better than a vehicle based foxhunt and they thanked me for my suggestion but their decision was made. Worried that this may be a bit of a prank, I had Bruce VK3TJN, who was attending the World ARDF Championships in Croatia, speak to one of the Norwegian team members who confirmed that "The Golden Goal" is a high rating sports show and they like to show unusual sports or things that happen associated with sport. I expect the Norwegian sporting enthusiast enjoys watching all kinds of sports. In Melbourne over the last 20 years, we have had several occasions where television crews have attended our local foxhunt, so this is not a new thing for us.

Well, it is now Friday December 10 and I arrived at the start location in Carlton (an inner city suburb of Melbourne). It was only minutes before the first of the TV crew turned up. The crew consisted of Director Christopher Elvestad, presenters Johan Golden and Henrik Elvestad, Cameramen Rune Moe and Andreas Roe.



WIA 2 m FM FOX, including the Halo antenna

Jack VK3WWW collating the scores for the night. Damian VK3KQ making sure that no mistakes are made

Golden Goal Crew. L-R Cameraman Andreas Row, Director Christopher Elvestad, Host Henrik Elvestad, Host Johan Golden, Cameraman Rune Moe.

While teams were arriving, Greg VK3VT and I were interviewed and asked questions about ARDF, Foxhunting, ham radio in general and what to expect on the night. Presenters Henrik and Johan plus the two cameramen each joined a foxhunt team and the plan was for them to compete against each other. Christopher rode with the fox and was able to see the other side of the sport. Fox for the evening was myself with assistance from Mark Besley VK3BES and Kostas Mitropoulos. All of the hunt locations were to the east of Melbourne and the last hunt was in Heathmont.

After this hunt, teams proceeded to the EMDRC Clubrooms in Burwood for an end of year BBQ.

Here it was a chance for foxhunters to properly meet the TV crew. After the results for the night and some presentations, Greg VK3VT returned the TV crew to their city hotel where I guess they would have had a great sleep after all the activity.

Golden Goal has a Facebook page here: http://www.facebook.com/GoldenGoalTV2 showing a little bit of the Foxhunt start and some of the other VK activities. The TV Show webpage can be found here: http://www.tv2underholdning.no/goldengoal - you may need to use the Google Translation plug-in.

I am sure the whole crew will be happy to be back in Norway and I must say it was a pleasure working with them over the last few months.

I am not sure when the Australian segments will go to air, but when this has happened I will receive a DVD of the show.

Unwanted mast/antenna interaction, and the potential effects on performance

Felix Scerri VK4FUQ

This is an issue that I consider very much underestimated in its possible negative impact on antenna performance, as I have finally found myself in recent times. In previous articles about my 20 metre Quad loop antenna, I have mentioned that my metal pipe mast holding up my antenna is about 10 metres high, essentially a half wavelength on 20 metres. As 10 metres is essentially a 'worse case situation' (a resonant half wavelength), I have frequently wondered if the loop performance has been compromised by a metal pipe mast of this length and if so, what are possible ways around it? I did not set out to make a pipe mast of this particular length, but sadly things just turned out that way!

Very recently I had been giving the whole matter a great deal of thought and a solution was found through a rather unrelated matter, that of lightning protection! In the end I drove a five foot length of a copper plated steel electrician's earth stake into the ground near to the base of the metal pipe mast and electrically bonded the two together with a short length of braid material. After driving the earth stake into the ground it was determined through ohmmeter

Photo 1: The earth stake at the base of the 10 metre high pipe mast.

measurements that although 'in the ground' through an existing piece of water pipe cemented in the ground, no measurable electrical connection to earth was found at the mast, possibly exacerbating the coupling between the loop and mast as a 'floating' half wave element. This indeed seems to have been the case!

In the time since installation of the earth stake, 20 metre contacts have indicated a clear improvement in strength, sometimes dramatically by several S points, noted especially 'on transmit'. To be perfectly honest, an exact analysis of the interaction (and loss) mechanism involved is difficult to quantify, but purely on the basis of signal reports there is no doubt that things have definitely improved. A bit of a revelation actually.

Interestingly enough in my very old copy of the ARRL Antenna Book (1987 or 1988 edition), there is a very interesting table in Chapter 23 on 'guy wire' lengths to avoid in the various amateur radio bands (refer Figure 1) and the length of my (electrically floating) metal pipe mast was right in the middle of the range to 'avoid' in the 20 metre amateur band. No, I am not surprised that there was undesirable interaction between the mast and loop antenna! Vertical polarisation of the loop would be the worst possible case, but horizontal loop polarisation is still not ideal, all things considered, given the proximity of the mast to the antenna. Even more interesting in this table is the statement that 'grounded' wires will exhibit resonance at odd multiples of a quarter wavelength, effectively, in my case anyway, shifting the resonance out of the 20 metre band, as I understand it anyway. This is certainly consistent with my own observations of improved performance.

Testing with both horizontal polarisation (bottom feed) and vertical polarisation (side feed) since the installation of the ground stake, although the general power line noise pick up is slightly less with vertical polarisation at this QTH, the more traditional horizontal polarisation seems to be preferable. Some variable RF feedback issues have been noted with vertical polarisation, along with a slightly narrowed SWR bandwidth as well as an increased coupling to the mast in general, which is possibly expected regardless. No adverse issues at all have been detected with horizontal polarisation, feeding at the bottom.

Possibly a loop antenna is more badly affected by potential mast interaction as wire exists in all geographical directions and positions 'around the mast' despite defined loop polarisation than say, a dipole or similar antenna. Be that as it may be, I love my 20 metre Quad loop antenna to bits....and now it is even better. The possibility of antenna/mast interaction, especially with a one wavelength loop antenna as configured at this QTH (diamond configuration), is definitely a point to watch on your own antenna installation, and as an aside I now (hopefully) have better lightning protection too! Refer Photo 1.

Figure 1: Copied from the ARRL Antenna Book, the black bars on this chart indicate ungrounded guy wire lengths to avoid for the eight HF amateur bands. This chart is based on resonance within 10% of any frequency in the band. Grounded wires will exhibit resonance at odd multiples of a quarter wave length. The measurements can easily be converted to the metric system.

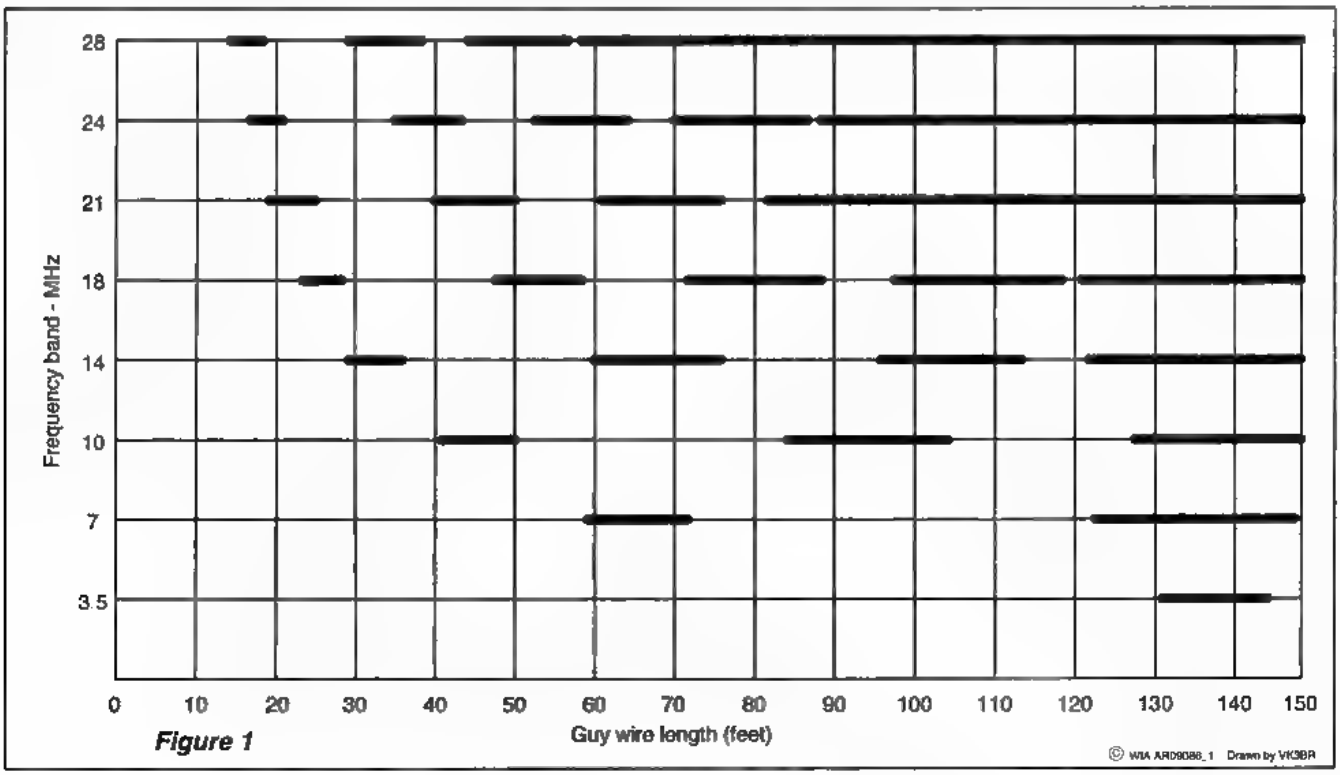


Figure 1

DX - News & Views

John Bazley VK4OQ
john.bazley@bigpond.com

A Happy New Year and let us hope that the rise in the Sunspot activity is here to stay for a few years, for it certainly has improved conditions particularly on 21 and 24 MHz. I personally will believe that it really has happened when we can regularly hear 28 MHz full of DX signals!

So what have we got to look forward to at the beginning of the New Year?

The two Jaceks (SP5EAQ and SP5DRH) will be active as T30AQ and T30RH respectively from **Tarawa** (OC-017), West Kiribati from March 1 to 17. T30RH will focus on 160 metres and 30 metres RTTY, with some activity also on 80 metres, while T30AQ will take care of the other bands (SSB only). They will try to have two stations with amplifiers operating at the same time. QSL via home calls, direct or bureau. Further information and log search at *www.sp5drh.com/t30/*

During this year's BERU Contest look for VP2MXF from Gingerbread Hill, **Montserrat**, that will be operated by Nigel G3TXF, while Richard G3RWL plans to be on **Barbados** He will be operating as 8P6DR with a K2 running 100 watts and wire antennas. QSL via G3RWL.

Jan DL7JAN will be QRV, possibly as J79AN, from **Dominica** (NA-101) from February 23 to March 6. He will be on CW, SSB and RTTY on 7 through 28 MHz, and possibly 80 metres. A special emphasis will be made for Asia. QSL via DL7JAN.

Laci HA0NAR is doing a tour through West Africa in January and February, with 6W **Senegal** and J5 **Guinea-Bissau** February 5 to 26. Look for 6W/HA0NAR and J5NAR. Also planned are side trips to AF-078 and AF-093, Senegal South Group and Guinea-Bissau Coastal Region Group, two "Islands on the Air" destinations. He plans to concentrate on 160, 80, 40 and 30, with 160 from J5 the biggest priority of all.

Peter HA3AUI is also in that region, 6W2SC **Senegal** and J5UAP from February 1 to March 31. He says the beaches are beautiful in **Guinea- Bissau**, where he will do some of his operating with his K3, Spiderbeam and verticals, 160-10, mostly CW and digital. QSL to HA3AUI direct. http.//cqafrica.net

From February to September, P29CW will be reactivated by Allan VK2GR and Josette VK2FXGR as a spare time activity while continuing their volunteer medical aid and education work for Australian Doctors International, in the remote Western Province of **Papua New Guinea;** IOTA OC-034. Low power operation (100 W) from 80 m through 10 m is planned. Logs will be available on eQSL and QSO checking via http://www.p29cw.blogspot.com Direct QSL requests go to Tommy VK2IR.

Antarctica: Alex Turkeev RD1AV (ex-RV1ZC), is now en route to Vostok Antarctic Station, and will stay there in 2011 as RI1ANC. He uses all bands on CW, SSB and digital modes His QSL manager is RN1ON.

Christian TL0A is back home in France until January 20. He will then go back to **Central African Republic** for five weeks, and then again back to France for a three week break.

Seth SM0DXI will be active from **Dominica** from January 7 to March 17 as J79XBI operating on SSB only. QSL via LoTW.

VQ9LA leaves **Diego Garcia** January 24th. He plans "to operate as much as possible up to the last day." Larry says he will try to put in as much time as he can on low bands and RTTY before his departure. Logs will be updated on LoTW. You can also QSL via the bureau or direct to N0QM. "Cards sent to my Diego address may or may not be lost in the mail due to the post office mishandling of mail." After VQ9, Larry plans to live in the Philippines part of the year and the USA part of the year. He says all QSL cards after January will be handled when he makes it back to the States in May. Once his paperwork clears in the Philippines, he plans to operate with his Elecraft K2 rig, 40- 10 m CW and RTTY. He says, "Low band operations will not be possible the first year due to my small house. My call should be DU3/N0QM." QSL via N0QM and LoTW.

Mike V4/W1USN and Bob V4/AA1M will operate from **St. Kitts** (NA-104) February 12-24. They plan to be on SSB, CW and PSK31. QSL via the bureau or to their individual home calls.

Jacques 3B8/F6HMJ will be active from January 5 to February 21 EXCEPT January 11 to January 20, when he will be going to **Rodriguez** as 3B9/F6HMJ. He will be working all bands on CW/SSB and perhaps RTTY. QSL to home call.

OA4/PA3GFE in **Peru** will be on the air December 28 until January 28. Look for him mainly on CW and digital, 80-15M. QSL to his home call, direct or bureau.

Luc F5RAV will be back in **Somone**, as 6V7T from February 26 to March 7. He will be operating from the 6W7RV rent-a- shack including participation in the REF SSB and ARRL DX SSB Contests. QSL via F5RAV.

Will AA4NC is heading back to Placencia, **Belize** where he plans to be active from February 16-23, including the ARRL DX CW Contest as V31RR. Before and after the contest look for him on CW, SSB and RTTY. QSL direct to AI4U or via LoTW, but not via the bureau!

Peter DC0KK is now in **Sri Lanka** (AS-003) and expects to be QRV as 4S7KKG until March 13. He will be using wire antennas, a dipole and ground plane on the digital modes (RTTY, PSK and WSJT). He may also try to activate **Barberyn** (AS-171). QSL direct or via the bureau to DC0KK. He will respond to all requests after his return home to Germany in March.

The F5PFP expedition leaves Ushuaia, Tierra del Fuego, Argentina, February 11 on their 45-day voyage,

visiting and operating from rare **Antarctic** stations and **Islands**. One non-ham tourist has cancelled his plans, opening up a place on the expedition, either as a tourist or ham operator. Contact F5PFP for more info on this adventure. Here is the itinerary, though without dates, for the sailing yacht L'ile d'Elle.

Base E-Stonington Island AN-001 - VP8
Base Y-Horseshoe Island AN-001 - VP8
Base W-Detaille Island AN-001 - VP8
Port Circoncision, Petermann Island AN-006 - FT5Y
Maldonado station, Greenwich Island AN-010 - HC
Yelcho station, Doumer Island AN-012 - CE9
Mushroom island, Alexander Islands group AN-018

Pierre ZS8M on **Marion Island** reports in his monthly newsletter that he is finding severe electronic interference. He has identified the fire alarm system and the air handling units as the main culprits. "Once switched on, they cause severe broadband interference, preventing successful HF operations, even on commercial frequencies," he says. He has relocated to the old radio room in the old base for the time being and will operate there whenever he can avoid the interference. He has been away from home for eight months now, with five months left to go on Marion, until late April. Pierre is feeling like time is running out for all the operating he had hoped to do. He has completed his mast and it is at 15 m tall now. He says, "The Radiant Broadgun dipole provides 2 to 30 MHz and is a truly efficient all-in-one antenna." He is feeding all the antennas with half-inch low-loss coax. He expects a bit better setup sometime in the near future. The SteppIR vertical is still not installed; Pierre has been too busy.

Hermann FK/DL2NUD and Stefan FK/DL9GRE plan to go to **Vanuatu** operating February 1-16 as YJ/DL2NUD or perhaps YJ9HP.

Members of the Provins ARC are planning a major DXpedition to **Cameroon**, TJ, from February 10 to 20. Application has been made for the callsign TJ3C. An international team of operators led by Frank F4AJQ includes Seb F5UFX, Michel FM5CD, Bob N6OX, Bill N2WB, Eric ON7RN, Gabriele I2VGW, Alain F6ENO, Jean-Luc F6BIV, Michel F5EOT, John F5VHQ, F2JD Gerard, Yan F1NGP, Mathieu F5PED and Henri F1HRE. Six stations will be operating 24 hours a day for nine days on all bands, 160 m to 10 m, CW, SSB, RTTY and PSK, with an emphasis on the low bands. A web site is under construction which will have additional information. QSLs will be handled by F5OGL.

Sable Island. Once again old man MURPHY has hit the Sable Island team. First the airplane and now the weather. The latest information from Randy NØTG "The CYØ team has coordinated with the approving authorities and flight charter services to access Sable Island for a "third" try. The tentative dates for this third attempt are March 7 to 15. The link "How to Contribute" on the web home page for those able to consider this matter will be helpful and appreciated. Additional details will be provided as they develop." www.cy0dxpedition.com

Finally, the following operations have been approved for DXCC credit:

9Q/DK3MO – Democratic Republic of the Congo Operations commencing in 2007
3CØC – Annobon 2010 Operation
3C9B – Equatorial Guinea 2010 Operation
3V9A – Tunisia 2010 Operation
3VØA – Tunisia 2010 Operation
TS7TI – Tunisia (Also /p operation) 2010 Operation
TS8P – Tunisia 2010 Operation
TS9A – Tunisia 2009 Operation
H40HP Temotu Province 2009 operation
7Z1HB Saudi Arabia, 2007 to present operation

Good luck in the pile-ups until next month.

Special thanks to the authors of *The Daily DX (W3UR, 425 DX News (I1JQJ)* and *QRZ.DX* for information appearing in this month's DX News & Views. For interested readers you can obtain from W3UR a free two-week trial of The Daily DX from *www.dailydx.com/trial.htm*

Silent Key Maxwell Ray Strugnell VK5SMR - SK

I regret to advise of the death of Maxwell Ray Strugnell VK5SMR.

Max was born in Adelaide on 12 February, 1925 and grew up in the suburb of Croydon. He attended technical school and later, at 18 years of age, enlisted with the RAAF where he served from 23 February, 1943 until 18 February, 1946.

In 1948 he worked as a linesman with the PMG, becoming a Technical Instructor, and retiring in 1982.

Max married in 1953, becoming the father of two daughters who later gave him five grand children and five great grand children.

Max was a keen supporter of local committees and working bees, being a valuable addition to his community. The Moonta Scouts and Radio Group will surely miss Max, as will many others.

To those who are unaware of his passing, the cause was diagnosed as coronary heart disease (heart attack). His passing took place in Melbourne at his daughter's home. The doctor stated that it was quick and was all over in an instant.

On behalf of the family, this article is submitted by Larry Teakle VK5HBG, who is also an old mate from the PMG days.

Spotlight on **SWLing**

Robin L Harwood VK7RH

2011 has finally arrived and only time will tell what this year may bring. Already two major shortwave broadcasters have left the scene, although a reprieve of sorts came through at the last minute. Radio Slovakia International from Bratislava stopped using their senders within Slovakia on 31 December 2010, yet a last minute deal saw programs to the Americas being aired via a small Florida based station WRMI. This broadcaster is rarely heard down here as it mainly airs programming directed to Cuba from various anti-Castro émigrés and not surprisingly is jammed extensively even when they do not have this being aired. WRMI is owned by Jeff White, a prominent DXer, and is also relaying the World Radio Network (WRN) which is mainly international programming from various program sources distributed via domestic networks such as the CBC, our own ABC, etc. WRMI is on 9950 yet I have never heard it because of the ever-present jamming and the sender is only 50 kW whilst the jammers are much higher power than a puny 50 kW.

Radio Prague also uses the Slovakian senders as Czechia and Slovakia were once a single entity which ended in the so-called Velvet Divorce in 1993. This station is also to cease utilising shortwave on 31 January as the number crunchers cannot justify serving a shrinking shortwave audience. Radio Prague will continue on the Internet but we are only too aware of the fate of international stations relegated to download streaming such as Swissinfo, the successor to Radio Swiss International. Both have disappeared.

Talking of disappearing, I noted around Christmas that Real Audio decided to axe their terrestrial radio Internet streams with over 4,000 stations. They replaced it with a puny 25 separate streams representing different genres. So much for the rationale behind the major broadcasters' decisions to axe HF for the Internet. Windows Media Player still streams some radio stations but they too have cut back. AOL, a major American web portal, does have radio streams yet these are NOT available at all outside of the US, allegedly because of copyright restrictions.

iTunes does have a fairly good selection, yet most using this site are more interested in downloading music than listening to international radio.

My hearing hassles finally came good just after Christmas, thanks to a nasal spray for hay fever. Apparently this allergy is responsible for my Eustachian tube blocking my eardrums and making me deaf. It is a joy now being able to listen on shortwave.

One station that I have heard is within the new exclusive amateur allocation on 40 metres. It is on 7175 kHz between 1930 and sign-off at 2000. Monitors say it is Eritrea, which is a small nation between Sudan and Ethiopia. It was formerly part of the latter and the two have been engaged in warfare ever since Eritrea broke away. Anyway the station was broadcasting in Arabic with a very professional production. These two nations are locked into a radio war and poach each others frequencies so that one is never quite sure which nation is broadcasting. Ethiopia is Coptic Christian whilst Eritrea is Islamic, as is Somalia next door. Ethiopia has also been involved in the Somalian Civil war. Ethiopia is using either 7165 or 7125, and is often jammed, and retaliates by jammimg Eritrea. Both also jam the VOA in Amharic as they resent anybody interfering in their ongoing squabble.

A new clandestine station appeared in November calling itself Radio Free Sarawak. It initially was not heard at all well and has now dropped to a lower frequency. I heard it at 1100 on 6205 kHz in Bahasa Malay and Chinese, with the occasional English phrase. The sender is reported to be in the CIS and also uses 7515 from 2300 till 2330. Programming favours independence for Sarawak from Malaysia. Sarawak is the northern part of Indonesian Borneo but the Indonesians are not involved in this clandestine operation and the local Dyaks, backed by ethnic Chinese, are believed to be behind the station.

Well that is all for now. Hopefully my hearing will remain good enough to listen over this year. Until next time, the very best of 73 from a very warm Tasmania.

Spinifex and dust storms

Barry Miller VK3BJM

Introduction

Back in October 2008, I decided to take a drive to South Australia and, through the serendipitous assistance of a number of VK5 operators, found myself at the top of Mount Arden, near Quorn, in the southern Flinders Ranges.

I'd taken gear for 144, 432 and 1296 MHz, and the enjoyable experience of that trip was described in an article that appeared in the December 2008 edition of *AR* - but, as suggested in that article, I felt I had unfinished business back on Mount Arden...

Photo 1: Saturday morning - the author starting the generator.

This stemmed from a near contact with David Smith VK3HZ, on the 2 metre band. David had been able to observe an aircraft flying from Sydney to Adelaide, and as it crossed over the path between our two stations, David's signals rose up out of the noise floor – a clear case of Aircraft Enhanced Propagation (AEP). Whilst David was relatively easy to hear, he couldn't hear enough of me for a complete contact.

The Objective

I strongly felt it would be worthwhile having a second attempt at working via AEP back into the Melbourne area, considering I now had access to various aircraft-position monitoring aids and could take advantage of regular flights on an established route.

Aircraft Enhanced Propagation

Aircraft Enhanced Propagation is a well documented phenomenon. Seven articles discussing AEP, by several authors, appeared in *AR* between 1985 and 1989; David, VK3HZ, has collected together copies of all these articles and made them viewable in PDF form at http://www.vk3hz.net/ae.htm Also stored there are copies of Rex Moncur's VK7MO GippsTech 2000 presentation, and Guy Fletcher's VK2KU explanatory note on the mechanism.

Photo 2: Adrienne's open air office.

This note is an excellent starting point for those unfamiliar with the mode, and who may be potentially daunted by some of the mathematics that crops up in the earlier articles.

In short, VHF/UHF propagation can be expected over non-line-of-sight paths of (theoretically) up to 950 km, with aircraft flying above 37,000 feet. This assumes that the aircraft is mutually visible to both stations – a low, unobstructed horizon naturally helps here. Without mutual visibility, you have nothing!

The path between my site at Mount Arden and the QTH of VK3HZ, for example, comes in at 903 km, give or take a metre. I have made AEP contacts over this sort of distance before, as have others.

Proof of the theory

Further encouragement came when I worked Peter Whellum VK5ZPG, who lives just outside Quorn, from my home station not long after returning from Mount Arden. This was something we had been attempting for some time, but using flights from Melbourne to Singapore – these fly out along my beam heading from Kyneton to Quorn.

Frequently they would shift off course – and no contact was made. This time we used a flight from Sydney to Adelaide. I was able to watch the aircraft on my ADS-B Virtual Radar Receiver as it approached our signal path, and whilst I lost ADS-B contact a few nautical miles prior to the cross-over point, the enhancement on 144 MHz happened on time and the contact was completed comfortably. The path distance is 795 km.

Being Heard...

On my previous trip, I had 150 watts and a home-brew 10-element DL6WU Yagi for use on 144 MHz. David runs the full legal VK power permitted, 400 watts, and a 17 element Cushcraft 17B2 Yagi.

I figured that, to beat the local Melbourne noise floor, a glorious pea-soup of RF-nasties, I would have to run as close to the VK limit as I could manage, and increase the size of my Yagi. I already had a 14-element DL6WU Yagi that I had built a few years earlier, so that part was sorted. That just left generating more power. Whilst this line of thought coincided with Ron VK4DD unleashing his popular BLF248 600 watt amplifier, I wanted something that I could use in the car whilst mobile, though perhaps not at full steam... – so I had to limit myself to something that used 13.8 volts as a source voltage. I canvassed opinions, and from the three obvious candidates – the Tokyo Hi-Power HL-350VDX, the Mirage B-5030, and the TE Systems 1452 – it seemed that the HL-350VDX had the best reputation regarding quality and support. Quite some time was spent in shekel-saving mode, before shifting into spend mode; but eventually the big brown box arrived, and planning the trip could move into selecting a date.

Photo 3. Saturday morning - clear blue skies.

Oh, and I also decided that, rather than running everything off the Land Rover's 120 Ah auxiliary battery, I had invest in a small generator. Again I asked about, and as a result I invested in a Honda EU20i. Along with that I needed a suitable 240 V/13.8 V power supply, and a Manson M8222 was added to the gear heap.

On paper, at least, I had added about 4 dB to my transmit side. I hoped that that would be just enough to lift my signal out of the noise to a 41 level – that is more than enough for a valid contact!!!

Diversions

As this was to be a single-band trip – 144 MHz only – I raised the idea of making it multi-mode. Normally I stick to SSB – and occasionally CW, if I can find the WD-40 for the key... This is to avoid the complications that multi-band multi-mode efforts bring to a solo operator. However, with only one band to operate on, I thought I would have a go at including the laptop and running the WSJT software. This would make the operation - and the grid locator, PF87 - accessible to stations not able to participate in the AEP experiment. Using FSK441 and Meteor Scatter, contacts would be possible to most of the east coast, whilst JT65 could fill the gap in between the AEP and MS footprints. Rex VK7MO assisted with a crash-refresher on the software.

I also contacted Guy Fletcher VK2KU to see if EME via JT65 might be workable. By some enormous fluke, the weekend I picked seemed likely to be very favourable; the waning moon would be in a quiet part of the sky, and coincided with the first weekend of the ARRL EME contest. So my first attempt at EME was added to the schedule! Guy also ran a couple of tests with me (direct, not EME) just so I could iron out any bugs in the system.

On site

My partner, Adrienne, and I departed Kyneton on the morning of Thursday 8 October. We arrived at Peter VK5ZPG's place mid-afternoon on Friday, having spent the night at Clare, in SA. By this stage we were falling behind schedule; so we dashed in, dashed out, and headed up the road to Argadells Station, the property on which Mount Arden is located.

The property owners, Malcolm and Judy Juett, had again kindly granted us access to the mount, and we stopped briefly to chat with Malcolm before setting up the hill. He mentioned that there were a couple of large groups from 4WD clubs roaming the property, and to be on the lookout for them on the ridge road. This was not good news, as space alongside the ridge track is at a premium, and mostly covered with spinifex.

On arrival on the ridge, the de-sensing caused by the Mt Arden SAGRS installation seemed worse than last time, but that may have been due to the monitoring being done with a vertical antenna, rather than the horizontally-polarised Big Wheel that I usually use. We drove the length of the ridge, but could not find anywhere better than the spot I had been last time. By this time it was 1630 ACDT, or later, so we attempted to 'shoe-horn' ourselves into the old spot. Adrienne had packed some high visibility vests, and collapsible traffic cones, and these came in very handy for marking the border between the track and the campsite.

As it turned out, they had magical properties, too; not one vehicle came along the track all weekend!

Photo 4: Sunday morning, before sunrise, with the Yagi pointing to where the moon rose.

We had not finished setting everything up before the sun set; the mast went up in the dark, and only then did we stop to cook and eat dinner – at 2100 ACDT. We still had to set up the generator and power cabling, the HF antenna, and all the laptop/interface cabling/mobile phone broadband modem. I did not want to stumble about the ridge top, in the dark, in the Spinifex, setting up generators and cables; and my brain was starting to make that special frying noise, so we called it quits and collapsed into the sleeping bags.

Day 1: Saturday

Perhaps not surprisingly, the alarm failed to wake me the next morning – or perhaps in the dark and the cold I had messed up setting it – I was woken by a phone call from Rex VK7MO asking how things were. I slurred something about setting the generator up, and being on air as soon as we could, and dragged myself outside. It was windy and very cold; but the sunrise colours were beautiful, once the sleep was wiped from my eyes. Setting up the remainder of the gear took 45 minutes, and then we were on air! Breakfast had to wait...

I think there were over thirty operators logged into the VK Logger when I came up – oh, boy..! The first contact, with Rex VK7MO, was completed via FSK441 by 2126 Z. Following Rex, Jim VK3II, David VK3HZ and Michael VK3KH were completed using the same mode. Gavin VK3HY was noted in the log, but as incomplete. I paused for breakfast at about 2230 Z (I think...). Brian, VK5BC was operating portable from Melrose; after a chat with him, David VK3HZ and Leigh VK2KRR were worked using JT65 – an attempt was also made to work Colin VK2KOL using FSK441, due to the number of pings that were being heard during the JT65 contacts, but this attempt was unsuccessful.

Later in the day voice contacts with Peter VK5PJ, Bill VK5ACY, David VK5AYD, Nora VK5NYD, Phil VK5AKK, Geoff VK5GF and Andrew VK5DL were completed. The contacts with VK5AYD and VK5NYD, who are located at Coober Pedy, were their first 2 metre contacts within VK5. VK5DL was a new call in my log book, as well, which was nice.

AEP

Photo 6: Sunday afternoon – the approaching dust storm, viewed from Mount Arden.

Photo 5: The camp on the ridge.

Sadly, the attempt to work via AEP into Melbourne was a one-sided affair again. Amazingly, only one aircraft positioned itself suitably at a time when I was both free, watching the ADS-B screen, and David VK3HZ was available. An Etihad flight to Sydney from Abu Dhabi (ETD454 – arrives in Sydney at 1930 AEDT each Saturday) came in over Adelaide at 39,000 feet and was visible on my ADS-B receiver prior to the point where enhancement to Melbourne would take place. Perfect!

At 0647 Z David's signal came up out of the noise, to the point where he was 51 for several transmissions. Perfect! Brilliant!! However, even with the extra power I was running, David could not hear me. This was NOT perfect. A bit later, David disconnected his Yagi from the input to his pre-amp, and found that his 'natural' noise floor dropped 10 dB or so. This was definitely not perfect, or brilliant. There seemed to be little point in persisting; between the absence of further suitable aircraft, the inherent high noise floor in Melbourne, and there being more stations wanting to use the digital modes, there were no further attempts at voice contacts into Melbourne.

EME

Unfortunately, the first of the two EME attempts, very early Sunday morning, proved fruitless. I was out of the sleeping bag at 1400 Z, well before moonrise at 1520 Z, in order to have plenty of time to get the generator, laptop and software going – and with time to sort out any problems if they occurred. Of course, when you do this, everything works perfectly – Murphy only joins you when you become complacent!

As a novice, and being in a shack with a window giving a view of where the moon should appear, it was a little disconcerting watching the software telling me that the moon was appearing over the horizon – yet not seeing it, as the waning half moon was rising dark side up! Sadly, not a trace of a signal was received in the hour we had before the moon was too high, above 10° elevation, for my fixed Yagi. Later, Guy VK2KU advised having received very poor ping levels from the moon, indicating that conditions were simply against us on the night.

The second EME attempt, scheduled to take place between 1610 Z and 1710 Z the next day, that is, early

Monday morning, was affected by what happened on Sunday...

Day 2: Sunday

The weather turned ugly on Sunday morning, with the winds increasing in speed, and storms forecast. Peter VK5ZPG drove up to visit us, and after discussing the conditions with him, we reluctantly closed operations and pulled down the station just before midday.

Peter had travelled up in his 4WD ute, and he kindly assisted by allowing us to toss half of our stuff in the back of it, rather than trying to completely repack the Land Rover. This saved us a lot of time - we completed repacking the Land Rover at Peter's place, in a more relaxed manner. We could see the line of brown from the dust storm, approaching over the plain to the west, as we broke camp.

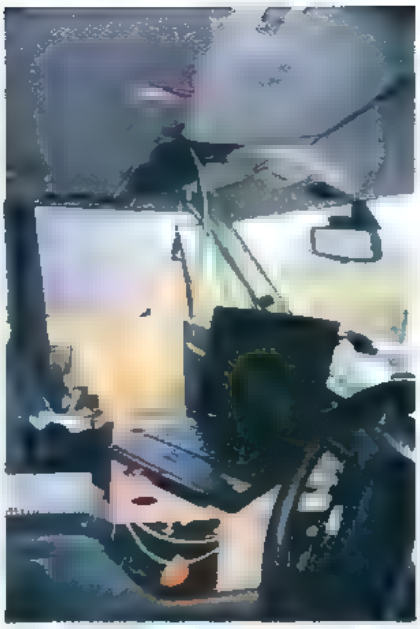


Photo 7: The operating position; VK Logger on the laptop.

Choosing not to be on a 740 m ASL ridge-line in such weather was the right thing, much as it pained me to give up on the exercise. I extend my apologies to those who missed out on a contact, due to this reduction in operating time.

In the four hours prior to this decision being acted upon, Colin VK2KOL, Steve VK2ZT, Rex VK7MO, Jim VK3II, John VK4JMC, and Peter VK3PF were all worked using FSK441; Jim VK3II and Michael VK3KH were worked using JT65, and Peter VK5PJ was worked on USB. Gavin VK3HY was again logged as 'seen' but not completed.

Conclusion

During the Saturday and part of Sunday that we were on air, 23 contacts were logged. Of these, eight were voice (USB); four were made using JT65 and eleven were via Meteor Scatter using FSK441. The Meteor Scatter contacts, naturally enough, covered the widest range of call areas; stations in VK2, VK3, VK4 and VK7 were worked using this mode. JT65 provided contacts into VK3 and VK2. All the voice contacts were to stations in VK5. Five incomplete contacts were also logged.

Personally I am very pleased with 23 contacts in a period of about 30 hours, considering the distances involved and the use of a single band.

Despite a lack of success, I very much enjoyed the EME attempt using JT65 and look forward to trying more of this challenge.

I did find the FSK441 mode a little frustrating. More than once a station appeared with a full decode, and I would start transmitting to them with a report, only to receive nothing else from them – but find another station from the same area appearing with a full decode. This happened to Gavin VK3HY several times; I also recall Andrew VK3OE appearing for a couple of transmissions, before being replaced by another station. I did not see any example of simultaneous decodes from multiple stations, which was something I'd heard could occur.

With regards to AEP, the issue of high ambient noise levels in cities like Melbourne may be insurmountable. If a way around this problem can't be found, there seems little point in attempting AEP contacts over these extreme distances – the signals will simply be blanketed in filth. And no-one likes a filthy blanket... Is there an answer to this?

Once again, having (relatively) high-speed broadband access, via the mobile phone network, was a boon. This not only applied to me, but also to Adrienne, who was able to work on assignments using her laptop and the Internet whilst sitting in a comfy chair under an awning – while I messed around on the radio. The broadband gave me full access to the VK Logger, plus email and other useful websites. Dare I mention the Bureau of Meteorology site?!

This was also the first time I had DXpeditioned (no, that is not really a word) with a partner, and the good news is that, despite the trying conditions and everything else, she claims this is not the last time she will do this with me! She even suggested returning to Mt Arden for a third time!! Not sure about that myself, though – I might be all Ardened-out...

Finally, I would like to thank everyone who participated, either in working or attempting to work us on this trip. Your support is appreciated.

All photos were taken by Adrienne Walker and the author.

Photo 8: Sunday afternoon – the Mount Arden summit RF installation, and bad weather.

WIA National Field Day 2010 Results

Philip Adams VK3JNI

Congratulations to the teams from Amateur Radio Victoria, WICEN SA and the Peel Amateur Radio Group for the three top efforts in the 2010 WIA National Field Day.

Adrian Addison VK5FANA should also be congratulated for participating and providing a log as a private entry.

Paul Hoffman VK5PH, representing the NFD committee, reported some excellent efforts by all the teams and it was evident that the publicity kits, prepared by Jim Linton VK3PC and assisted by Robert Broomhead VK3DN, were of great value to all participants. The field day station operated by the Midland Amateur Radio Club also earned Paul's special mention. Thanks are also extended to Fred Swainston VK3DAC and Gerard Rankin VK5ZQV who assisted on the committee.

Other clubs and individuals were active on the day including Scout Radio and Electronics from Victoria and many other stations called in to the event stations.

The weather on the day in VK3 and VK7 was reported to be not encouraging for either the general public or the invited guests. Other states fared much better. SRESU noted an 800% increase in the number of visitors in two hours after it stopped raining. All participating stations are encouraged to send letters of thanks to VIPs who visited their stations.

Several clubs reported good feedback from the general public and the VIPs. It was evident that the use of a spruiker together with good graphical displays, including colour and movement, all helped to attract interest. Radio related computer applications on the monitor notably attracted attention and kept the visitor interested and asking questions. Some clubs have already reported expressions of interest in forthcoming Foundation training courses directly as a result of the contacts made with the general public at the NFD.

Certificates of participation will be forwarded to all participating stations and clubs in the inaugural WIA National Field Day. More stories and photos can be found on the WIA Web pages.

Was it worth it? Yes, the WIA Board and the NFD Committee are convinced that the WIA National Field Day is an ideal way to expose amateur radio to the general public and to raise the profile of amateur radio with our emergency services and public officials.

We look forward to seeing the first 2011 registrations on the WIA online system in the near future. Please mark the date 17 April 2011 on your calendars for this year's WIA National Field Day.

Station	Station Type	Score
Amateur Radio Victoria	Public	3367
WICEN SA	Public	2410
Peel Amateur Radio Group	Public	1806
Adelaide Hills Amateur Radio Society	Public	1529
Midland Amateur Radio Club	Public	1219
Southern Peninsula Amateur Radio Club	Public	1012
Bayside District Amateur Radio Society Inc	Public	814
Lower Murray Amateur Radio Club	Public	733
Adrian Addison VK5FANA	Private	75

Jenny VK3MDR working the VK3SAA station using SSTV.

Philip VK3JNI with two of our visitors who spent some time discussing the station.

"Amateur Radio: The first technology-based social network"

A combined capacitance meter and spot frequency generator

Paul Anderson VK2GPT

An instrument for measuring capacitance values and for generating spot frequency signals is described. This duality is achieved without resorting to circuit modifications, component value variations, or wiring modifications.

A crystal controlled clock together with digital frequency division provides a stable and repeatable calibration accuracy of short and long duration. Provision for zero setting is not required. The low power consumption favours the adoption of nine volt battery type EN22 alkaline as a suitable source of power. The expected useful battery life with intermittent usage is almost equal to shelf life.

Capacitance values are read on a moving coil meter (50 uA with 50 divisions, marked 0 – 100. The design is based on the well known principle of the charge in a capacitor C = Q/V, (farads, amp-seconds and volts respectively).

Referring to Figure 1, a square wave is applied to the capacitor under test with D1 and D2 separating the charge and discharge currents. When D1 is conducting, a current flows through meter M1 with an average reading directly proportional to the charge repetition rate, the charging voltage and the capacitor value. The reading resolution is enhanced through a choice of fifteen meter ranges.

This ensures that meter pointer deflection can be obtained at more than 20% of FSD except for values less than 20 pF. These ranges are available by selecting a meter scaling factor of 1, 2 or 5 in combination with a choice of up to five decimal frequency divisions. Short and long term accuracy of calibration is thus obtained in combination with a crystal controlled clock (IC1). The 1 MHz oscillator frequency should be adjusted against a known standard only if the unit is to be used as a spot frequency generator, otherwise C1 could be set to approximately 22 pF. Diodes D1 and D2 are type AA118 but other equivalents could be used.

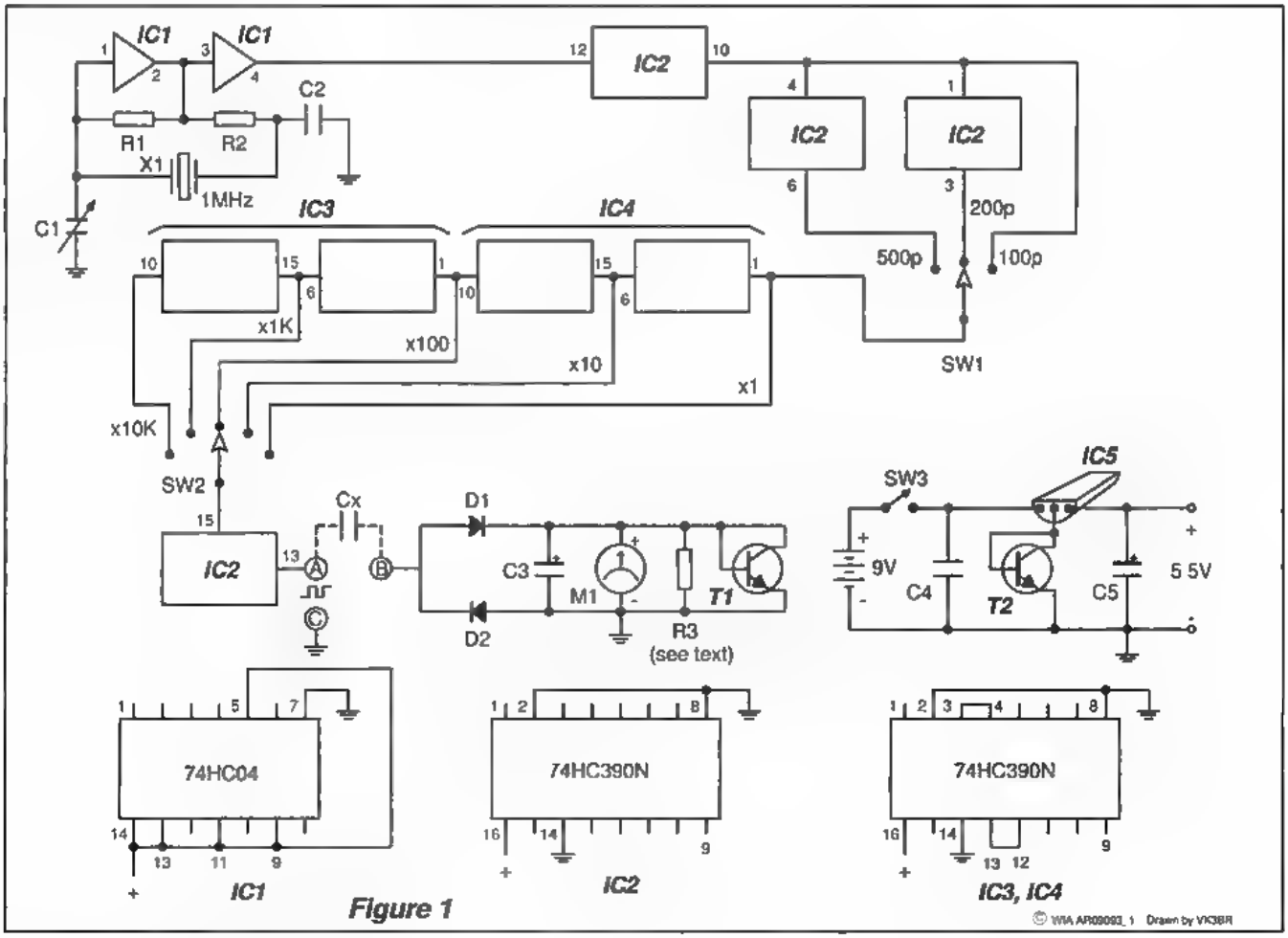


Figure 1. The circuit diagram

C3, a 150 uF tantalum capacitor should be checked for leakage, not more than 0.2 uA. T1 provides a reasonable amount of protection against meter overload. The power supply uses a very low drop out regulator IC5 (LP2950) of 5 volts. This is increased to 5.5 volts approximately by addition of T2.

Calibration consists of selecting a stable resistor for R3, such that with a standard accurate capacitor of 10 nF, connected across terminals A and B and Sw1 and Sw2 set at 100 pF and X100 respectively a meter deflection of full scale is obtained. The value of R3 will depend mainly on the particular meter used.

Table 1

Switch settings		Capacitance	Output
Sw1	Sw2	at FSD	frequency
100 p	x 1	100 pF	100 kHz
200 p	x 1	200 pF	50 kHz
500 p	x 1	500 pF	20 kHz
100 p	x 10	1 nF	10 kHz
200 p	x 10	2 nF	5 kHz
500 p	x 10	5 nF	2 kHz
100 p	x 100	10 nF	1 kHz
200 p	x 100	20 nF	500 Hz
500 p	x 100	50 nF	200 Hz
100 p	x 1 k	100 nF	100 Hz
200 p	x 1 k	200 nF	50 Hz
500 p	x 1 k	500 nF	20 Hz
100 p	x 10 k	1 µF	10 Hz
200 p	x 10 k	2 µF	5 Hz
500 p	x 10 k	5 µF *	2 Hz

** On this range, the pulsating meter reading is easier to resolve with a highly damped meter movement.*

Component List

R1	3M9
R2	3k3
C1	50 pF trimmer
C2	27 pF NPO
C3	150 µF tantalum 16 V
C4	10 nF ceramic 50 V
C5	1 µF tantalum 16 V
IC1	74HC04
IC2, 3, 4	74HC390N
IC5	LP2950
T1, 2	*BC147
D1	AA118 Telefunken
X1	1 MHz crystal
Sw1	1 pole 3 position
Sw2	1 pole 5 position
Sw3	SPST
M1	50 µA meter, 50 divisions, 0 to 100

** Note the BC147 could be any common small signal transistor, for example, a BC107 or BC547.*

When using the unit as a generator, the output is available across terminals A and C.

This facility is very useful when checking the linearity and calibration of CROs with switching step factors of 1, 2 and 5. The possibility of using the remaining unused buffers with IC1 is left to the astute constructor.

Sw1 and Sw2 switch functions, when used as a capacitance meter or spot frequency generator, are tabulated in Table 1.

Contests

Craig Edwards VK4LDX/VK8PDX & Phil Smeaton VK4BAA/VK4KW

Contest Calendar for February 2011 – April 2011

February	5/6	Mexico Intl. RTTY Contest	RTTY
	12/13	CQWW RTTY WPX Contest	RTTY
	12	Asia-Pacific Sprint	CW
	12/13	RSGB 160 Metres Contest	CW
	19/20	ARRL Intl. DX Contest	CW
	26/27	CQWW 160 Metres Contest	SSB
March	5/6	ARRL Intl. DX Contest	SSB
	12/13	**RSGB Commonwealth Contest**	**CW**
	19/20	**John Moyle Field Day**	**CW/SSB/FM**
	19/20	BARTG RTTY Contest	RTTY
	19/20	Russian DX Contest	CW/SSB
	26/27	CQWW WPX Contest	SSB
April	**3**	**QRP Hours**	**CW/PSK31/RTTY/SSB**
	9/10	Japan Intl. DX Contest	CW
	9/10	Yuri Gagarin Intl. Contest	CW
	16/17	YU DX Contest	CW/SSB
	23	**Harry Angel Sprint**	**CW/SSB**
	23/24	Helvetia Contest	CW/SSB
	23/24	SP DX RTTY Contest	RTTY

Note: Always check contest dates prior to the contest as they are often subject to change.

After a brief one and a half years editing the Contests column, I have decided to give someone else the opportunity to do it. Fortunately Phil is able to take on the role again, so that was great timing. I have enjoyed my time here but in the second half of 2010 I really found myself sacrificing operating time to do the editing duties. This was made even more difficult when I did my IOTA DXpeditions to Fitzroy Island OC-172 in October and Magnetic Island OC-171 in December. Something had to give and so I am pleased to give the keys back to Phil. I am looking at doing a couple more IOTA trips in North Queensland during 2011 and I need to devote time to other pursuits like upgrading from Standard to Advanced. So I will see you on the air and good luck to everyone during ARRL and WPX contests coming up this time of year.
73s de Craig VK4LDX / VK8PDX.

A New Year usually symbolises 'out with the old and in with the new'. Well, almost.

Many thanks go to Craig for doing a sterling job.

Good luck with those planned IOTA trips!

A belated Happy New Year to all for 2011 from the VK4BAA household. I hope that Santa emptied his sack in your shack! We must have been good boys and girls, as Cycle 24 seems to be starting to have a bit of an effect at last.

So, after a quick shuffle around the shack and looking at the world of amateur radio, I wonder what has changed in my absence....

Shorter suffix callsigns are now in place and are being given an airing during world-wide contests as well as domestic. That is good news – but single letter suffix callsigns are still being debated and are likely to be some time away from being used by the general amateur populace.

VK is still behind much of the amateur world as regards legal power output limits. Plans are afoot to try and redress the imbalance somewhat, but the subject is far from being put to bed and may not reach full equilibrium anyway.

What else then? Let us see.

VK had a pair of operators (Kevin VK6LW and Bernd VK2IA/VK6AA) in the WRTC who did VK proud! One thing that is obvious is that contesting is coming of age in Australia. The claimed scores submitted for the 2010 round of the Oceania, WPX and CQWW contests for example, have increased greatly over the past 12 months or so. Cycle 24 might try to claim some of the accolades for this but in reality, a number of stations and operators have progressed hugely over this period and the evidence is there for all to see. The scores for 2011 will be interesting to see, as well as the final results for the 2010 contests.

No doubt about it – 2010 has been a good year for VK contesting.

2010 ARRL 10 m contest

Activity in this part of the world was somewhat low for this one - not too surprisingly I suppose – but 2011 might prove to be the time to watch 10m closely for openings.

Steve VK3TDX reported that conditions were poor to the States from his part of the world, but a 'pipeline' to JA managed to keep Steve awake to the tune of almost 560 QSOs. A late afternoon/evening opening to Europe on the first day was good log-fodder, but this did not repeat into the final day in such strength. Serial numbers from Europe were quite low and a chat with AH2DT in Guam revealed that they had not had the openings into NA and EU that they usually enjoy.

Steve VK6IR also reported poor conditions on 10 m with around 200 QSOs in the log to keep Steve's hand off his stubby.

Alan VK4AN chose CW as his sole mode and found close to 300 stations for his troubles, but reported strong QSB.

Mirek VK6DXI was operating as Z21DXI using low power and CW from Zimbabwe, netting close to 560 QSOs. Mirek used a simple wire antenna to grab some excellent DX during the

Picture 1: VK4 VKCC attendees were John VK4IO, Catherine VK4GH, Mike VK4DX, Paul VK4FPDW, Mike VK4QS, Phil VK4KW, Alan VK4SN, Trent VK4TI and Dave VK4NDX.

contest and was surprised to find the band open – but not to VK or Asia.

John VK4EMM used VK4IU in the high power mixed mode section to produce some impressive numbers to get to 443,000 points. John's claimed score places him within the world top 100 claimed scores for the contest and section, at number 10. Well done John!

Just for once, it looks as though VK was in the prime position for the propagation for this contest. If only this could carry-over to all other international contests! It was on my 'Santa List' but has obviously been overlooked.

2010 CQWW CW Contest

Last year (2010) was the first year that VK1CC dipped a tentative toe in the CW Section of CQWW. VK2IM, VK2NU and VK2CCC operated as a multi-multi station for the contest, netting some 4132 QSOs for 5.5 million points. The guys finished an hour early to pack up due to the weather, but everyone had a great time and learned a lot for 2011.

The ZL8X team also entered the multi-multi section and had a ball from a relatively rare spot on the planet, logging close to 12,000 QSOs, showing that the rest of the world do indeed point their beams in our direction from time to time.

John VK4EMM was in the operating chair as VK4IU and logged over 2100 QSOs for a score of 2.1 million points using low power. No mean feat for low power – an impressive tally!

Bernd VK2IA operated as VK6AA from the station of the Northern Corridor Radio Group in Perth and amassed 4000 QSOs for 6 million points. Bernd dedicated his log to Neil Penfold VK6NE who passed away in late September 2010. Bernd put the Zone 29 station into good use, working like a man possessed on the 40 m and even the "rare as hen's teeth" 10 m EU pile-ups.

Kevin VK6LW chose 15 m and grabbed a superb 2500 QSOs and 1 million points.

Mirek VK6DXI was firing-up the bands, logging ZL8X as his first QSO on 160 m on a seemingly un-open band. No QSOs to EU however on the first day, so Mirek had a sniff around the other bands to make-up the numbers, but claimed for 160 m only after a second day working NA stations by the bucketful and a few hardy EU signals that managed to make the trip to VK.

Patrick VK2PN was also playing in the contest, netting almost 900 QSOs for his efforts. Allan VK2GR was also in the battle, gaining a similar QSO tally. Allan used N1MM for logging and had to lock horns with the software from time to time as band changing appeared to be fraught with difficulties.

Steve VK3TDX had family commitments curtailing his BIC (Bum In Chair) time, but still managed to grab almost 1400 QSOs on 15 m, with late openings into EU. An excellent effort Steve!

Alan VK4SN also went for a 15 m single band entry, but Murphy paid a call to Alan's shack and managed to break the internet connection and persuade the PC operating system to spit the dummy too. Warnings flashed on the screen whinging about video drivers, swiftly followed by the blue screen of death. Frantic button pushing got the PC alive again, as well as Alan's heart-rate higher than his previous QSO rate!

Laurie VK7ZE was also to be found on the bands, entering his log as a checklog for 2010.

2010 CQWW SSB

Catherine VK4GH got stuck into the contest and bagged just over 120 QSOs, using the contest to tease-out a few new countries for her DXCC award. An excellent approach, as the international contests often produce activity within parts of the globe usually not populated with a radio amateur.

VK1CC was activated during the contest as a multi-two station by David VK2NU, Vlad VK2IM, VK2KDP, Richard VK2BD and Ian VK2MCI. The guys used the contest to nurture new operators as well has having some fun on the bands. Troubled with equipment failures, the group grabbed just under 3000 QSOs into the log for 3.5 million points – a great weekend's effort! 10 m allowed the VK2 team to work into NA for a while, but the second day the band barely opened to JA. 15 m worked well for most VK contesters in the contest and the VK1CC operators used the band extensively – but were unable to hear some of the stations being worked by the VK4 and VK6 entrants! 20 m was reportedly mainly S&P and 40 m was the usual EU noise wall.

Steve VK3TDX prefers his contesting with a CW flavour, but still managed to find time to trawl the bands for any goodies on offer. Steve's BIC time extended somewhat beyond his initial time-slot allocation, allowing close to 1800 QSOs to be logged for just under 1.5 million points.

VK4UC was operational as possibly the only multi-multi entry from VK for 2010. Operators consisted of VK4UC, W6NV, VK2IA, VK3TZ, VK4CZ and VK4TI. Close to 2800 QSOs got into the log, for just over 3.5 million points – an excellent effort from a suburban lot! With all that RF flying round, I dare say that a microwave oven was not required for warming the pies.

The lads at VK6NC went 'big time' for the contest, as the log was to be submitted as dedicated to the memory of Neil Penfold VK6NE. The VK6 boys usually split into a club based group as well as an individual station or two, but felt this year that a concentrated effort was required to maximise their score. It worked, as from memory, the log bulged with 3000 QSOs and 3 million points as a multi-single station. I hope I have remembered those totals correctly, as my laptop chewed-up some data lately and some emails unfortunately fell victim!

Finally, VK4KW was also on the bands for the contest, operated as M/2 for the most part - and M/S for the rest - simply down to operator headcount. Operators were VK4NDX, VK4HAM, VK4SN, VK4LAT and VK4BAA. A few tweaks and twiddles to the station improved performance in 2010 and saw a rise in QSOs on most bands when compared to 2009. 80 m was very noisy indeed for atmospherics - as was 160 m too. 10 m opened a weary DX eye from time to time, with NA and EU worked - but not in huge abundance. With just under 5000 QSOs and 7.5 million points, the team felt that the lack of sleep was well worth it!

Commonwealth Contest

Beru, otherwise known as the Commonwealth Contest, will be taking place in March 2011. The format for the Commonwealth Contest 2011 team competition is likely to be virtually identical to last year's competition, and again with the Oceania multiplier that we and the Kiwis benefited from being reduced to give the rest of the Commonwealth a better chance.

Team Captain is yet to be announced at this time, but the 2010 team was a struggle to assemble and Kevin VK6LW did a superb job to get everything organised in time. My CW skills are far too rusty to be included in the team – I need to practice and polish my skills back to where they once were. If you want to be in the team, then drop me a line and I'll forward your details to whoever the team captain turns out to be. With the Poms grabbing the Ashes, VK needs to step-up to the plate to teach them a lesson!

And finally....

The VK4 'chapter' of the VKCC met at the Ipswich Jets League Club over the Christmas break. Picture 1 shows the attendees.

A great time was had by all, with discussions including tales of battles fought during contesting and antenna design approaches, as well as a good opportunity to meet and greet the face behind the callsign. So, the next time that one of the attendees grabs my frequency, I will now know who is responsible! I am just kidding. Honest.

If you have any contest related material for inclusion within the column, topics that you would like covered or even some experiences and pictures you would like to share, then please feel free to get in touch via vk4baa@wia.org.au

See you on the bands.

73 de VK4BAA/VK4KW
Phil Smeaton

Spring VHF-UHF Field Day 2010: Results

Contest manager: John Martin VK3KM

The Spring Field Day was very well supported, with a total of 98 logs received. This is another record. I am looking forward to wearing my fingers down typing up the results for well over 100 logs next January! The rules for the Summer Field Day will be the same as for the Spring event, with the addition of an optional extra "Microwave Challenge" certificate for stations operating on 1296 MHz and higher bands.

Call	Name	Location	50	144	432	1296	2.4	3.4	5.7	10	24	47	TOTAL
	MHz	MHz	MHz	MHz	GHz	GHz	GHz	GHz	GHz	GHz			
Section A: Single Operator, 24 Hours													
VK5ZD	Iain Crawford	PF95, PF96	91	438	685	912	930	960	930	900	890	-	6736
VK2DAG	Matt Hetherington	QF56, QF57	73	516	705	768	540	430	430	430	420	-	4312
VK3JTM	Tim Morgan	QF12	74	480	615	952	880	-	490	490	-	-	3981
VK4OE	Doug Friend	QG61, QG62	35	300	375	472	620	450	210	450	330	-	3242
VK3WRE	Ralph Edgar	QF31	-	348	405	594	570	210	330	440	-	-	2887
VK1DA	Andrew Davis	QF44	46	687	605	368	210	210	-	210	-	-	2336
VK5LD	Dale Loffler	PF96	83	462	765	936	-	-	-	-	-	-	2246
VK5LA	Andy Wilss	PF85	-	450	605	832	320	-	-	-	-	-	2207
VK5OQ	Keith Gooley	PF95	47	351	545	544	-	330	-	220	-	-	2037
VK3LY	Bill Day	QF03	89	498	585	760	-	-	-	-	-	-	1932
VK5TX	Ben Hennessy	PF95	51	423	450	616	-	-	-	-	-	-	1540
VK5FANA	Adrian Addison	PF85	-	537	830	-	-	-	-	-	-	1367	
VK3FEMT	Stewart Wilson	QF22	-	675	670	-	-	-	-	-	-	-	1345
VK4TJ	John Kirk	QG52	21	255	370	168	330	-	-	-	-	-	1144
VK1BL	Ted Garnett	QF44	24	75	125	168	210	210	-	210	-	-	1022

Call	Name	Location	50	144	432	1296	2.4	3.4	5.7	10	24	47	TOTAL
	MHz	MHz	MHz	MHz	GHz	GHz	GHz	GHz	GHz	GHz			
VK5AIM	Steve Mahony	PF95	80	63	110	648	-	-		-	-	-	901
VK1AGP	Greg Parkhurst	QF44	26	315	2850	-	-	-		-	-	-	626
VK5AGZ	Derek Reuther	PF94, PF95	66	174	365	-	-	-			-	-	605
VK2LSB	Stuart Bayliss	QF55	-	237	105	168	-	-	-	-	-	-	510
VK4HEC	Ewen Cameron	QG52	-	267	235	-	-	-	-	-	-	-	502
VK2FWB	Fred Baker	QF46	21	231	235	-	-	-	-	-	-	-	466
VK3VCL	Wayne Bruce	QF22	-	180	165	-	-	-	-	-	-	-	345
Section B: Single Operator, 8 Hours													
VK2DAG	Matt Hetherington	QF56, QF57	57	291	470	560	430	430	430	430	420	-	3518
VK3HY	Gavin Brain	QF32	99	552	645	760	-	-	-	-	-	-	2056
VK2TDN	Dave Nelson	QF56	-	270	410	448	220	-	220	400	-	-	1968
VK2GG	Dan Joyce	QF56	35	141	230	320	220	-	220	410	350	-	1926
VK3YFL	Bryon Dunkley-Smith	QF22	58	354	460	594	-	-	-	380	-	-	1836
VK5LA	Andy Williss	PF85	-	366	490	680	210	-	-	-	-	-	1746
VK5LD	Dale Loffler	PF96	59	288	470	760	-	-	-	-	-	-	1577
VK2CQ	Dave Maloney	QF55, QF56	23	141	230	320	-	-	-	390	320	-	1424
VK2TRF	Jack Swart	QF55, QF56	23	129	195	304	-	-	-	390	330	-	1371
VK5TX	Ben Hennessy	PF95	46	342	320	544	-	-	-	-	-	-	1252
VK3UBM	Michael Borthwick	QF21, QF22	21	252	240	272	330	-	-	-	-	-	1115
VK2GOM	Robert Greaves	QF56	-	171	230	-	220	-	-	400	-	-	1021
VK5AKH	Andrew Hall	PF95	71	366	485	-	-	-	-	-	-	-	922
VK5FANA	Adrian Addison	PF85	-	330	540	-	-	-	-	-	-	-	870
VK4ADC	Doug Hunter	QG61	49	237	305	272	-	-	-	-	-	-	863
VK3BG	Ed Roache	QF23	71	393	-	288	-	-	-	-	-	-	752
VK1PAR	Al Long	QF44	12	366	365	-	-	-	-	-	-	-	743
VK5AR	Alan Raftery	PF94, PF95	-	285	440	-	-	-	-	-	-	-	725
VK3RU	David Williams	QF23	-	288	235	-	-	-	-	-	-	-	523
VK1AGP	Greg Parkhurst	QF44	19	198	250	-	-	-	-	-	-	-	517
VK5KPR	Peter Banks	PF87	21	129	105	-	-	-	-	-	-	-	255
VK4JAZ	Grant McDuling	QG62	-	96	105	-	-	-	-	-	-	-	201
VK3SF	Ross Sargent	QF22	-	72	110	-	-	-	-	-	-	-	182
Section C: Multi Operator, 24 Hours													
VK3UHF	LUMEG (1)	QF21	102	738	935	1192	940	790	920	1040	540	540	7737
VK3ER	EMDRC (2)	QF22	182	744	1020	1328	800	230	470	480	-	-	5254
VK3ALB	(3)	QF11	99	621	675	1040	720	-	620	490	-	-	4265
VK4WIS	SCARC (4)	QG63	92	327	470	456	620	340	-	470	330	-	3105
VK5LZ	Elizabeth ARC (5)	PF85	59	378	575	504	-	350	349	-	-	-	2206
VK4WIE	CBRS (6)	QG62	92	465	505	440	-	-	-	-	-	-	1502
VK4WAT	TREC (7)	QH22	107	351	455	472	-	-	-	-	-	-	1385
VK2AWX	HRG (8)	QF57	85	375	480	352	-	-	-	-	-	-	1292
VK2MA	HADARC (9)	QF56	90	357	570	-	-	-	-	-	-	-	1017
VK3APC	MDRC (10)	QF21	80	486	430	-	-	-	-	-	-	-	996
VK1MAD	(11)	QF44	22	273	60	-	-	-	-	-	-	-	355
Section D: Multi Operator, 8 Hours													
VK3ALB	(3)	QF11	93	435	525	856	620	-	430	430	-	-	3389
VK5SR	SERG (12)	QF02	32	390	525	664	460	210	440	450	-	-	3171
VK3KH	(13)	QF21	32	399	535	720	680	-	-	350	-	-	2716
VK3BEZ	EZARC (14)	QF31	67	429	520	456	-	-	-	-	-	-	1472
VK5OM	(15)	QF03	-	178	280	360	-	-	-	-	-	-	818
VK2KCM	(16)	QF56	-	315	370	-	-	-	-	-	-	-	685
Section E: Home Station, 24 Hours													
VK3MY	Ross Keogh	QF22	-	609	845	1008	790	-	-	-	-	-	3252
VK5LSB	Simon Brandenburg	PF94	78	459	665	600	-	-	-	-	-	-	1802
VK5VCO	Paul Mullins	PF95	38	426	620	640	-	-	-	-	-	-	1724
VK5NE	Paul Roehrs	PF95	65	456	640	504	-	-	-	-	-	-	1665
VK2MER	Kirk Mercer	QF55	-	537	665	320	-	-	-	-	-	-	1522
VK4ZDP	David Purkis	QH32	101	330	495	536	-	-	-		-	-	1462
VK5MWH	Mark Hutchinson	PF94	74	369	500	184	-	-		-	-	-	1127
VK2KRR	Leigh Rainbird	QF34	-	315	340	448	-	-		-	-	-	1103
VK5ALX	Alex Glinski	PF86	33	219	425	376	-	-	-	-	-	-	1053
VK3KIS	Andrew Kayton	QF22	-	306	315	336	-	-	-	-	-	-	957

Call	Name	Location	50	144	432	1296	2.4	3.4	5.7	10	24	47	TOTAL
	MHz	MHz	MHz	MHz	GHz	GHz	GHz	GHz	GHz	GHz			
VK2ZTV	Peter Sturt	QF57	54	306	345	224	-	-	-	-	-	-	929
VK3VFO	Nick Kraehe	QF31	29	330	360	184	-	-	-	-	-	-	903
VK4VDX	Roland Lang	QG62	46	372	430	-	-	-	-	-	-	-	848
VK2EI	Neil Sandford	QF68	29	378	175	-	260	-	-	-	-	-	842
VK3ACA	John Adcock	QF22	-	375	440	-	-	-	-	-	-	-	815
VK2TG	Robert Demkiw	QF55	22	312	440		-	-	-	-	-	-	774
VK2HRX	Compton Allen	QF56	36	243	200	264			-		-		743
VK3KH	Michael Coleman	QF21	32	144	290	264			-	-		-	730
VK3WT	Max Chadwick	QF22	-	240	240	248	-	-	-	-	-	-	728
VK4HBO	James Kop	QG62	-	192	250	256	-	-	-	-	-	-	698
VK4NA	Alan Wills	QG62	63	297	320	-	-	-	-	-	-	-	680
VK3GK	Lee Moyle	QF21	75	201	340	-	-	-	-	-	-	-	616
VK5FPAW	Paul Schulz	PF95	-	189	350	-	-	-	-	-	-	-	539
VK3HV	George Francis	QF31	60	246	250	-	-	-	-	-	-	-	556
VK2NR	David Porter	QF56	-	228	245	-	-	-	-	-	-	-	473
VK2AMS	Mark Swannack	QF68	11	156	170	48	80	-	-	-	-	-	465
VK5HZ	Darryl Ross	PF95	-	147	305	-	-	-	-	-	-	-	452
VK3PF	Peter Freeman	QF31	-	78	120	184	-	-	-	-	-	-	382
VK3TOM	Tom Steadman	QF31	27	135	145	-	-	-	-	-	-	-	307
VK3XH	Joe Walsh	QF22	37	123	120	-	-	-	-	-	-	-	280
VK3ZHQ	Eric Warren-Smith	QF22	32	90	140	-	-	-	-	-	-	-	262
VK5FXYL	Jade Ross	PF95	-	69	110	-	-	-	-	-	-	-	179
VK3AKT	Kevin Trevarthen	QF22	24	-	-	-	-	-	-	-	-	-	24
Section F:	**Rover Station, 24 Hours**												
VK5ZT	Tim Dixon	PF85, 86, 87, 95, 96, 97	104	444	745	976	910	1020	1000	900	890	-	6989
VK3AKK	Ken Jewell	QF11, 12, 21, 22	-	132	-	-	-	540	650	-	540	540	2402
VK2VVV	Ross Masterson	QF46, 54, 55, 56, 57	68	366	550	736	-	-	-	-	-	-	1720
VK2UVP	Vic Pisani	QF56, QF57	21	174	160	-	-	-	-	-	-	-	355

(1) Lara UHF & Microwave Experimenters Group: Ken Jewell VK3NW, Charlie Kahwagi VK3NX, Chas Gnaccarini VK3PY, David Learmonth VK3QM
(2) Eastern & Mountain District Radio Club: Mike Subocz VK3AVV, Peter Forbes VK3QI, Steve Baranyai VK3QW, Jack Bramham VK3WWW
(3) Lou Blasco VK3ALB, Nik Presser VK3BA, Peter Westgarth VK3APW, Jenni Blasco VK3FJEN, Michael Blasco VK3FMIC
(4) Sunshine Coast ARC: Leicester Hibbert VK4ALH, Cec Tysoe VK4FMOZ, John McPherson VK4JMC, Wayne Shaw VK4WS, Dave Carr
(5) Elizabeth ARC: Wayne Rankin VK5LWR, Bruce Gauci VK5VAB, John Ross VK5NI
(6) City of Brisbane Radio Society: David Noble VK4KSY, John Morris VK4MJF, Ron Croucher VK4CRO, Ross Coiledge VK4WRC, Miles Colledge VK4FUST
(7) Tableland Radio & Electronics Club: Dale McCarthy VK4DMC, Stu Dunk VK4SDD, Jeff Cochrane VK4BOF, John Roberts VK4TL
(8) Hunter Radio Group: VK2SH, VK2FA, VK2FERM,VK2FWJL,VK2FBAI,VK2YCJ, VK2CLH
(9) Hornsby & District ARC. Justin VK2CU, Bob VK2BMU, Peter VK2TTP, Colin VK2JCC, Mike VK2MTX, Dave VK2FDIW
(10) Moorabbin & District Radio Club: Ian Morris VK3IFM, Gerard Werner VK3GER
(11) Shane Goodwin VK1MAD, Matthew Bowman VK1MAT
(12) South East Radio Group: Colin Hutchesson VK5DK, Trevor Niven VK5NC, Steven Smith VK5GL, Andrew McKinnis VK5KET, Tony Hutchison VK5ZAI, Ian Bishop VK3FN8L
(13) Michael Coleman VK3KH, Peter Roberts VK3TPR
(14) Eastern Zone ARC: Glenn Reynolds VK3SI, Nick Kraehe VK3VFO, Simon Beeching VK3FCAL, Dean Webster VK3NFI, Molly (The Dog)
(15) VK5OM: Jim Bywaters VK5OM, Brian Farmers VK3AQX, Peter Sherlock (SWL)
(16) Colin Matten VK2KCM, Ed Durrant VK2ARE

Don't forget the National Field Day on 17 April 2011

AMSAT

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2010 – A summary

SO-67 and HO-68 have performed well since their launch late last year. Though not on continuously SO-67 is very loud and HO-68 gives good signals when activated.

Possibly the most adventurous mission was Unitec-1 tagging along with Japan's Venus Climate Orbiter. Unfortunately Unitec-1's 5.84 GHz transmitter went silent within a few days, a long way short of Venus. From the same launch the cubesat Negai was placed into low Earth orbit and soon re-entered.

On the downside of 2010, GO-32 has stopped being controlled, FO-29 went silent for a while, RS-22's beacon has gone silent and the best of AO-51 may be over.

Six-monthly review of operational OSCARs

Here is an updated review of the operational OSCARs and other satellites using amateur satellite service bands. All satellites listed here have been heard by myself during November 2010 except PCSAT (NO-44), DO-64, RS-15, RAX and FASTRAC.

Satellites added or revised since last review in July: AO-7, UO-11, IO-26, FO-29, GO-32, AO-51, CO-65, SO-67, Tisat-1, RAX, O/OREOS and FASTRAC.

Failed satellites since last review: RS-22, and Negai.

The names of the satellites are given as OSCAR number, full name and (NASA catalogue number). Modes are represented by frequency bands: H=10 m, V=2 m, U=70 cm, L=23 cm, S=13 cm in order of uplink/downlink.

Linear transponders use CW and SSB. With the exception of AO-7's V/H transponder, all linear transponders are 'inverting' types and use LSB for the uplink and USB on the downlink. For AO-7 mode V/H use USB for both links. Most of the activity is in the middle of the passband.

Foundation licensees are permitted to transmit SSB/CW and FM voice to any of the satellites in the 10 m, 2 m and 70 cm bands as well as receive all the satellites. Foundation licensees

AMSAT-VK

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About AMSAT-VK

AMSAT VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.
AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net
Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RMP Maddens Plains repeater 146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland
VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia
VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Temble on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania
VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory
VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.
Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

are not permitted to use 23 cm uplinks (e.g. AO-51 and CO-67) or AO-51's 13 cm downlink (e.g. mode V/S). See the AMSAT column in September 2009 AR for more details

Telemetry decoding programs for several satellites are available from Mike Rupprecht's website at *http://www.dk3wn.info/software.shtml*

AO-7 AMSAT OSCAR 7 (7530)

Launched: 15/11/1974
Status: Operational only when it is in sunlight. It may be in any mode. During non-eclipse periods it will alternate between modes V/H and U/V every 24 hours. Beacons are not always on.
Mode: V/H (old mode 'A'), linear, non-inverting.
Uplink: 145.850-145.950 MHz, Downlink: 29.400-29.500 MHz.
Beacon: 29.502 MHz CW. Occasionally the 435.106 MHz CW or RTTY beacon may be on.
Mode: U/V (old mode 'B'), linear, inverting.
Uplink, 432.125-432.175 MHz, Downlink: 145.975-145.925 MHz.
Beacon: 145.972 MHz CW at 10 or 20 WPM, intermittent operation
Check the on line log for current status at *http://www.planetemily.com/ao7/main.php*

UO-11 UOSAT-2 (14781)

Launched: 1/3/1984
Status: Intermittent. UO-11's 145.826 MHz beacon came back to life late 2009 after being silent for 18 months and will only work when in full sunlight. You may hear its distinctive signal while monitoring the frequency for other satellites such as ISS, NO-44 and HO-68.
Beacon: 145.826 MHz FM 1k2 AFSK.
http://www.g3cwv.co.uk/oscar11.htm

IO-26 ITAMSAT (22826)

Launched: 26/09/1993
Status: Semi-operational. IO-26 is in Master Boot Loader (MBL) mode. It transmits continuous BPSK carrier with the occasional telemetry packet. Some attempts have been made to configure IO-26 into a 'bent-pipe' transponder similar to AO-16.
Beacon: 435.790 MHz 1k2 BPSK (Note: this has shifted from the original published frequency)
http://www.amsat.dk/oz7sat/tlm/view.php?sat=io26

FO-29 FUJI-OSCAR 29 JAS-2 (24278)

Launched: 17/8/1996
Status: Semi-operational as linear transponder. Most activity is around 435.850 MHz. The BBS and digipeater operation have not been used since 2003. FO-29 has been difficult to command due to high internal temperatures. It should not be experiencing eclipse problems until 2012
Mode: V/U linear, inverting.
Uplink: 145.900-146.000 MHz, Downlink 435.900-435.800 MHz.
Beacon: 435.795 MHz CW telemetry.
http://www.ne.jp/asahi/hamradio/je9pel/index.htm

GO-32 Gurwin TechSat-1B (25397)

Launched: 10/7/1998
Status: Intermittent. Since 30/3/2009's on-board computer crash GO-32 has been sending intermittent telemetry. GO-32 has often been operating in 'emergency mode' with a 1k2 signal on 435.325 MHz.
Beacon: 435.225 MHz 9k6 FSK.
Emergency Beacon: 435.325 MHz 1k2.
Beacon callsign: 4XTECH-11.
http://www.amsat.org/amsat-new/satellites/satInfo.php?satID=14&retURL=/satellites/status.php

NO-44 PCSAT (26931)

Launched: 30/9/2001
Status: Operational only in full sunlight. One solar panel and the batteries are not functioning.
Mode: V/V 1k2 AFSK packet digipeater.
Uplink: 145.827 MHz, Downlink 145.827 MHz.
http://pcsat.aprs.org

SO-50 SAUDISAT-1C (27607)

Launched: 20/12/2002
Status: Operational. SO-50 has a sensitive receiver and a transmit power of only 250 mW.
Mode: V/U FM voice with 67 Hz CTCSS tone
Uplink: 145.850 MHz, Downlink 436.795 MHz (but may switch to 436.800MHz).
To switch the transmitter on you need to send a few seconds of 74.4 Hz CTCSS tone.
The order of operation is thus (allow for Doppler as necessary):
1) Transmit on 145.850 MHz with a tone of 74.4 Hz to arm the 10 minute timer on board the spacecraft.
2) Now transmit on 145.850 MHz FM voice using a 67 Hz CTCSS tone to access the transponder
3) Sending the 74.4 Hz tone again within the 10 minute window will reset the timer. Users have reported difficulties.

AO-51 AMSAT-OSCAR 51 ECHO (28375)

Launched: 29/6/2004
Status: Operational
Mode: AO-51 is a versatile satellite that can be configured to operate in many modes, often two at a time. It can use FM and SSB voice, 9k6 and 38k4 FSK packet as a BBS or digipeater. It has three transmitters (two on 70 cm and one on 13 cm), four 2 m receivers and a wideband receiver that has been used on 10 m and 23 cm. AO-51 will be experiencing more eclipse periods so the high power systems are unlikely to be turned on. The control team issue a monthly bulletin on modes and frequencies AO-51 will be using. Default frequencies are:
Uplink: 145.920 MHz, Downlink 435.300 MHz (67 Hz PL tone may be required) FM voice.
Uplink: 1268.700 MHz, Downlink: 435.150 MHz 9k6 FSK.
Beacon: 435.150 MHz 9k6 FSK.
http://www.amsat.org/amsat-new/echo/CTNews.php

VO-52 HAMSAT (28650)

Launched. 5/5/2005
Status: Operational. VO-52 has two linear transponders that use nearly the same passbands. The Indian transponder is normally in use. Most activity is around 145.900 MHz.
Mode: U/V linear inverting.
Indian transponder:
Uplink: 435.220-435.280 MHz, Downlink 145.930-145.870 MHz.
Beacon: 145.936 MHz continuous carrier.
Dutch transponder:
Uplink: 435.225-435.275 MHz, Downlink 145.925-145.875 MHz.
Beacon: 145.860 MHz CW 12 WPM preset message.
http://www.amsat.in/hamsat.htm
Note: FM operation on VO-52 is permitted for QRP/handheld. In India, SSB gear is not very common and the operations team have suggested that FM operators can use this bird. If you are planning to work FM, please use another part of the passband e.g. 145.920 MHz. It would be best to arrange a sked in advance, as VO-52 is rarely used in FM mode over VK/ZL. Excessive uplink power will cause the beacon to FM.

The following are mainly Cubesats. Reception reports are often well received and can result in a QSL card for your efforts. See websites for details.

CO-55 CUTE-1 (27844)

Launched: 30/6/2003
Status: Operational. From the first cubesat launch CO-55 continues to send CW telemetry.
Beacon: 436.8375 MHz CW telemetry.
http://ss.mes.titech.ac.jp/ssp/cubesat/index_e.html

CO-57 XI-IV (27848)

Launched: 30/6/2003
Status: Operational. From the first cubesat launch, CO-57 continues to send CW telemetry. It also has an on-board camera. Pictures of the Earth can be found on the website below.
Beacon: 436.8475 MHz CW telemetry
http://www.space.t.u-tokyo.ac.jp/gs/en/index.aspx

CO-58 XI-V (28895)

Launched: 27/10/2005
Status: Operational. CO-58 has an on-board camera. Pictures of the Earth can be found on the website below.
Beacon: 437.465 MHz CW telemetry.

http://www.space.t u-tokyo.ac.jp/gs/en/index.aspx

DO-64 Delfi-C3 (32789)

Launched: 28/4/2008
Status: Semi-operational The linear transponder has failed The control team switched DO-64 back to science mode on 29/1/2009. Often by the time it has reached VK/ZL the transmitter has stopped, so it will be heard here occasionally. If they change it to basic mode then the telemetry will be heard over VK/ZL on most passes. The telemetry can be demodulated and decoded using software from the Delfi website.
Beacon: 145.870 MHz (primary) or 145.930 MHz (secondary) 1k2 BPSK telemetry.
http://www.delfic3.nl/index.php

CO-65 CUTE-1.7+APDII (32785)

Launched: 28/4/2008
Status: Operational. The CW beacon is on continuously. The mode L/U APRS digipeater has been activated during weekends using 9k6 GMSK modulation. Unproto via JQ1YTC.
Mode: L/U 9k6 GMSK.
Uplink: 1267.602 MHz, Downlink 437.475 MHz.
Beacon: 437.275 MHz CW telemetry.
http://lss.mes.titech.ac.jp/ssp/cute1.7/index_e.html

CO-66 SEEDS II (32791)

Launched: 28/4/2008
Status: Operational. CO-66 is a cubesat that transmits CW telemetry, packet telemetry and a pre-recorded message of voice and SSTV. Sometimes all three can be heard during a pass over VK/ZL as it changes modes. At 450 mW output, CO-66 has the strongest signal of the cubesats.
Beacon: 437.385 MHz CW telemetry, 1k2 AFSK packet and FM Digitalker/SSTV.
http://cubesat.aero.cst.nihon-u.ac.jp/english/main_e.html

SO-67 SumbandilaSat (35870)

Launched: 17/9/2009
Status: Operational but transponder times are set by command stations. SO-67 will not be available for every pass. Its high powered transmitter (5 watts) is easily heard. There is a 3 second tail after each transmission, so pause before transmitting to the satellite Keep your overs brief as there is also a cut-out timer For best results set your radio to narrow FM or turn down the mic gain if your transmitter allows. SO-67 is scheduled for use over a different area each week. For VK/ZL it is usually during the last week of the month For the current schedule see the AMSAT-SA website at http://www.amsatsa.org.za/
Mode: V/U FM voice.
Uplink: 145.875 MHz with 233.6Hz CTCSS, Downlink 435.345 MHz.
http://sumbandilamission.blogspot.com

HO-68 XW-1 CAMSAT (36122)

Launched: 15/12/2009
Status: Operational but may still be under commission. The CW beacon is on continuously and the transponders have been activated for some passes.
Mode: V/U FM voice.
Uplink: 145.825 MHz 67.0Hz CTCSS, downlink 435.675 MHz.
Mode: V/U linear (inverting).
Uplink: 145.925 – 145.975 MHz, Downlink: 435.765 – 435.715 MHz.
Mode: V/U PacSat BBS.
Uplink: 145.825 MHz 1k2 AFSK packet, Downlink: 435.675 MHz 1k2 AFSK packet.
Beacon: 435.790 MHz CW telemetry.
http://www.camsat.cn

RS-series satellites

RS-15 RADIO ROSTO (23439)

Launched: 26/12/1994
Status: Intermittent. The beacon only comes on when satellite is in full sunlight, and is not on every pass.
Beacon: 29.352 MHz on/off carrier

RS-30 YUBILEINY (32953)

Launched: 23/5/2008
Status: Operational. Only the CW beacon has been heard over VK/ZL. Other transmission types are heard when it is in range of the control stations in Russia. It has been heard by AO-51 users when they share the same footprint.
Beacon: 435.315 MHz (primary), 435.215 MHz (secondary) CW telemetry.
http://www.dk3wn.info/sat/afu/sat_rs30.shtml

Other satellites using amateur frequencies.

ISS (25544)

Launched: 20/11/1998
Status: Operational The International Space Station has an amateur radio station that operates in many modes. Ultimately it depends on the manned crew's activities. Voice, digital, and SSTV modes are used. Sometimes experimental modes are tried; one example was a 23 cm FM repeater uplink on 1269.650 MHz.
Mode: U/V crossband FM repeater.
Uplink: 437.800 MHz FM, Downlink 145.800 MHz.
Mode: V/V Digital / APRS 1k2 AFSK FM.
Uplink: 145.825 MHz, Downlink: 145.825 MHz.
Mode: V/V FM Voice, SSTV.
Uplink: (Region 1) 145.200 MHz, (Region 2/3) 144.490 MHz, Downlink: 145.800 MHz.
http://www.issfanclub.com/
http://www.rac.ca/ariss/

COMPASS-1 (32787)

Launched. 28/4/2008
Status. Operational Compass-1 has a chirpy CW telemetry beacon that is normally sent every 3 minutes. If battery voltage is low it will send every 8 minutes COMPASS-1 can be commanded by any amateur to send telemetry on demand using DTMF codes, though the satellite may not give a response each time Every command will give a confirmation beep on 437.275 MHz.
**35## - request a test beacon CW.
**36## - request a test packet 1k2 AFSK FM (UI-Frame)
**60## - request a housekeeping frame in 1k2 AFSK FM (KISS frame).
Mode: V/U DTMF command, 1k2 AFSK.
Command: 145.980 MHz, Downlink 437.405 MHz.
Beacon: 437.250 MHz CW telemetry.
http://www.cubesat.de

STARS (33498)

Launched: 23/1/2009
Status: Operational. STARS is two satellites tethered together. Both 'Mother' and 'Daughter' have CW and 1k2 AFSK packet telemetry on 70 cm The CW beacon of 'Mother' is on continuously, but 'Daughter' is weaker and intermittent.
Beacon: Mother 437.485 MHz, Daughter 437.465 MHz FM 1k2 AFSK.
Beacon: Mother 437.305 MHz, Daughter: 437.273 MHz CW telemetry.
http://stars1.eng.kagawa-u.ac.jp/english/index.html

PRISM (33493)

Launched: 23/1/2009
Status: Operational. Following from the success of CO-57 and CO-58, the University of Tokyo built PRISM to carry a larger camera with a telephoto lens. The packet downlink may be only available over the command stations in Japan, though the CW beacon is on world-wide. PRISM also has an uplink channel but frequency and modulation details have not been published yet
Mode: -/U 1k2 AFSK or 9k6 GMSK.
Downlink: 437.425 MHz.
Beacon: 437.250 MHz CW telemetry.
http://www.space.t u-tokyo.ac.jp/prism/main-e.html

KKS-1 (33499)

Launched: 23/1/2009
Status: Operational. KKS-1 transmits a series of messages on its CW beacon
Beacon: 437.385 MHz CW message.
http://www.kouku-k.ac.jp/~kks-1/kks-gs-top-e.htm

SWISSCUBE (35932)

Launched: 23/9/2009
Status: Operational Transmits CW telemetry with frames every 30 seconds The tone quality of the transmitter is poor

Decoding software is available at their website.
Beacon: 437 505 MHz CW telemetry.
http://swisscube.epfl.ch

ITUpSAT (35935)

Launched: 23/9/2009
Status: Operational. This Turkish cubesat transmits a frame of CW every three minutes giving its name and callsign.
Beacon: 437.325 MHz CW message.

Tlsat-1 (36799)

Launched: 12/7/2010
Status: Operational. Tlsat-1 is the first Swiss student-built satellite. Its mission is to test various materials exposed to atomic oxygen at low Earth orbit
Downlink: 145.980 MHz FM FSK.
Beacon: 437.305 MHz CW at varying speeds.
http://www.spacelab.dti.supsi.ch/tlSat1MS.php

RAX (37223)

Launched: 20/11/2010
Radio Aurora Explorer. Its mission is to explore large plasma formations in the ionosphere. Beacon decoding software available at the website below.
Beacon: 437.505 MHz 9k6 GMSK telemetry
http://rax.engin.umich.edu/

O/OREOS (37224)

Launched: 20/11/2010
Organism/Organic Exposure to Orbital Stresses. O/OREOS is the next NASA scientific cubesat experiment after GeneSat and PharmaSat. This experiment monitors the growth of micro-organisms and changes in organic molecules in space.
Beacon: 437.302 MHz 1k2 AFSK telemetry every 5 seconds.
http://ooreos.engr.scu.edu/dashboard.htm

FASTRAC (37227)

Launched: 20/11/2010
FASTRAC is a dual satellite system to explore inter-satellite communications. After the primary mission has finished they will be turned over to the amateur operators for APRS use.
FASTRAC-1 437.345 MHz 1k2 AFSK telemetry
FASTRAC-2 145.825 MHz 1k2 AFSK telemetry.
http://fastrac.ae.utexas.edu/our_project/overview.php

Final pass

No amateur built satellites were launched in 2010 but ARISSat-1 and Fun-cube are scheduled for launch this year. KiwiSAT's hardware construction has finished and launch negotiations are now under way.

VK6news

Keith Bainbridge VK6RK

A happy, healthy and prosperous DX full New Year to you all. As I am writing this it is the day before Xmas Eve, all the festivities have yet to start and my holiday on Tasmania is only four days away! By the time you read this you will all probably be Christmas'ed/New Year'ed, even Australia Day'ed, out! Seems a long time away now! Holidays will be over for another year and we will be settling down to what will hopefully be an exciting year on the radio.

Sunspots are improving and monitoring Zeljko VK6VY and Steve VK6IR operating from the NCRG shows the bands are definitely improving. The DX those guys manage to work is fantastic.

To business:

December was an eventful month with a visit to VK6 by WIA President Michael Owen, to update us on national activities. He first met with Scout Communications Group leaders, then the VK6 Advisory Committee. He also chaired a 'council of clubs', as we used to call it, at the Neil Penfold State Amateur Radio Centre on Saturday 18 December. This was a most interesting meeting, giving all clubs in attendance (NCRG, HARG, WARG, WICEN and Ham College) a chance to ask questions and to update Michael on their activities and goals for the coming year. The following day a BBQ was held in Kings Park and those who attended witnessed the presentation of the Jim Rumble Award to Heath VK6TWO and Monique VK6FMON for their services to AR in the state over the past year. Michael also announced the new WIA Awards Manager, but more on that later. It was good to hear things first hand from the National Office and to be kept up to date on national and international matters.

News from the Hills Group

The Hills Amateur Radio Group (HARG) will be holding a Swapmeet at their clubrooms on Sanderson Rd., Lesmurdie. HARGFEST is on Saturday afternoon, 9 April 2011. All amateurs, friends and interested parties are invited. Other AR groups in WA are also invited to attend to promote their amateur radio area of interest. HARG also hope to have some commercial representation. Entry is $5 and includes a door prize entry. Tables are free but MUST be booked; contact Marty VK6FDX on 0447 382 963 or email marty.martin@bigpond.com to reserve yours. There will be a raffle, sausage sizzle and soft drinks. More details will follow in the News West broadcast on Sunday mornings.

I am looking forward to going; hopefully it will not be as hot next year!

I have received a report on JOTA from Greg VK6ED which follows on from my report last month.

The 1st Herne Hill Scout Group participated in the Jamboree On The Air at the Neil Penfold State Amateur Radio Centre at Whiteman Park in October and it was a success thanks to the generosity of our host, the Northern Corridor Radio Group. The NCRG provided the Scout Group with excellent facilities, equipment, expertise, and a spacious camping area for the duration of the event. More than 40 Joeys, Cubs and Scouts contacted various Scouting groups in other countries, throughout Australia and locally. Contacts were made during Saturday afternoon and Sunday morning using the radio equipment in the club shack, EchoLink and portable IRLP equipment on two metres.

The youth members also participated in various electronic activities. They constructed a flashing LED bicycle tail light to take home and fit to their bikes. The light was in the form of a commercially supplied kit and was completed by the kids on Saturday afternoon. Other activities included Morse code sending and receiving using Morse keys and sounders at two separate stations, a night time light signalling

wide game, a night time 'Fox Hunt' to locate a hidden radio transmitter, constructing wooden pole chariots, and tables of radio/electronic items to pull apart and find out what is really inside. It was amazing to see the interest from everyone in dismantling the electronic gear; our youth showed us how motivated they are to explore if they are given the opportunity to do so. This is what Scouting is all about, after all

Our Scout group has two young lads with Foundation licences already, but there is interest by some others in the group to obtain licences and get on the air. Plans are underway for them to do the Foundation course.

It was noticed that some youth members were very good with the soldering, without much practice at all. Some were good with the tools and cutting wires. Also, some of the kids were very natural and confident (even talkative) on the radio when talking to other Cubs, Scouts and Guides. So I think we can conclude that we have some future technicians, engineers, electricians, public speakers and even some politicians among our youth members!

The 1st Herne Hill Cubs and Scouts wish to thank the NCRG members for their effort, and for supporting the youth in their local area. A great community service.

A pleasure Greg, looking forward to next year!

Commencing Sunday 7 November 2010, the 21.185 MHz Travellers Net will run in a new time slot, from 0400 UTC to 0500 UTC. Syd VK6SMH the Net Controller for the daily 21.185 MHz net has consulted with the regular relay operators and together they have reached the conclusion that due to poor propagation conditions it is necessary to change the net time from its 0100 – 0200 UTC slot.

This net commenced operation soon after the introduction of the Novice licence to provide travellers with Novice calls a service similar to the 20 metre Traveller's Net which was well established on 14.106 MHz for the full calls. Today the 20 metre net runs on 14.116, opening at 0200 UTC with a callback and reports at 0300 UTC.

The operators on both nets log the callsign, name and planned overnight stop for all travellers who check in each day, pass any messages as requested, and arrange QSOs or QSPs as required as a voluntary service to the amateur community, their family and friends. So listen out for the 21.185 net between 0400 and 0500 UTC or check in and give a signal report. The Travellers Net has provided great service over the years so hopefully this change will aid their efforts.

As I mentioned earlier, there has been a change in the WIA Awards Committee. I was asked to promote and restore the old Zone 29 Award as it had fallen by the wayside over the years. In doing so, I offered to run the award and was propositioned by Eddie VK4AN the WIA National Awards Manager about joining the Awards Committee. I thought why not, it is a chance to put something back into the hobby and the WIA.

Before I knew it I was on the committee and had been proposed to replace Eddie as manager. In for a penny, in for a pound as they say, so as of Michael Owen's announcement on Saturday 18 December, your VK6 Notes scribe is also the WIA National Awards Manager

The committee has been expanded to include another new member Chris VK3QB. VK6 is well represented on the committee with Alek VK6AP also a member. Should you decide to apply for one of the many WIA Awards please visit the website at http://www.wia.org.au/members/awards/about/

That is about it for this edition, still no shack photos sent in to me, so get that new camera you got for Xmas out and take one of your pride and joy and send it to me for publication.

May you all have a most rewarding 2011 and I look forward to receiving your input for the column over the coming months.

Silent Key — Arthur Brean VK6SY – SK

Unfortunately we have another silent key. Arthur Brean VK6SY passed away peacefully on Monday, 29 November 2010 at 0730 local time at Osborne Park Hospital. He was licensed in 1978.

Arthur was born in Cardiff, South Wales on 20 April 1926 and always had that Welsh sense of humour. Soon after leaving school in 1940, Arthur obtained employment with a famous steam railway company, the Great Western Railway, as a trainee signal man and continued to be a senior signal man with GWR at many signal boxes over Wales. Married in 1951 to Jean (deceased), they came to Australia in 1952.

Arthur was first employed by WAGR as a signal man. His first signal box was at Mt Lawley then he served time at Karrakata and Wellington Street Eastern signal boxes. In 1980, Arthur started with CIG as a medical technician and retired from CIG in 1990.

He gained his first ham licence in 1978 as VK6NRT, then VK6KBA in 1982, and finally a full call, VK6SY, in 1983. Arthur was a member of the NCRG. He will be missed by all his amateur radio friends. Besides ham radio, his other interest was collecting GWR steam locomotives and carriages, and he had a small working model railway at his QTH. Arthur is survived by four children and nine grand children.

Arthur Brean VK6SY ... silent key.

Contributed by Bob Bristow VK6POP

A safer antenna mast from an old war machine design

Ian Simpson VK3GPL

In books and films about wars in the ancient past, you may occasionally see the invaders using a trebuchet, which was a large catapult device on wheels that hurled rocks at the enemy. Refer to the illustration in Photo 1.

The trebuchet design can also be used to make a mast that is easier to lower and erect, and allows a convenient way to adjust antennas, without the danger of climbing on roofs, up tall ladders, or hanging off trees, which has caused serious problems in the past. The design is a pivoted 11 metre mast as shown in Photo 2, and this allows the mast to be lowered and raised in seconds.

The construction of the base starts with a pair of two by four metre treated timber poles, about 900 mm apart, concreted about one meter into the ground. These are stabilised by three cross pieces on the same side of the poles- this will be the side where the mast will be lowered. Accurately cut the top of the poles, to make sure that they are level- use a spirit level or a length of clear tube with water.

Photo 1: An illustration of a trebuchet, the old war machine whose design fundamentals were used for the homebuilt mast.

Photo 2: The completed and safer 11 metre antenna mast.

Photo 4: A view of the counterbalance, actually two buckets of sand.

Photo 3: The 'U' shaped fulcrum at the top of the poles.

Pieces of half-round timber are bolted on top of each pole to make the 'U' shape fulcrum, as can be seen in Photo 3.

The pivoting mast is made by bolting a length of aluminium tubing between two three metre wooden poles. In the illustration, the mast is 40 mm aluminium tubing, with the lower half strengthened by sitting inside a length of 50 mm tube. Add a spacer between the lower ends of the wooded poles to keep them parallel.

A one metre cross piece is attached about 900 mm below the top of the wooden pole- this becomes the axle, and is fitted into the 'U' shapes on top of the base, see Photo 4.

A rope is attached to the base to control the raising and lowering. When the mast is upright, this rope ties it to the base. Experiments have shown that two buckets of sand attached to the base will provide a useful counterbalance, as can be seen in Photo 4. A tip is to have a stand available to rest the top of the mast when it is lowered, to avoid any damage to the antenna elements, as seen in Photo 5.

The major benefit of this design is that the mast can be safely and easily lowered and raised by one person, standing on the ground. (Another advantage- if the neighbours complain about TVI, you might return to the original design to hurl rocks!)

Photo5: Working on the mast whilst it is in the 'down' position.

New WIA Membership Brochure

Did you know the WIA has a new membership brochure?

Produced for the WIA by Roger Harrison VK2ZRH and Robert Broomhead VK3DN with illustrations by Ivan Smith, the new DL size brochure carefully sets out the many valuable benefits of WIA membership in an easy to read, easy to understand format. The brochure is intended for those who are yet to become a WIA member, or members who are considering renewal. The full colour brochure with its eye catching cover is ideal for display and distribution at hamfests, field days etc. Easily obtainable clear plastic DL brochure stands are perfect for displaying the new membership brochure, whilst its small size format makes it ideal for keeping a copy in the car glovebox or door pocket along side the Calling CQ brochure.

Copies of the brochure can be obtained from the WIA National office, simply send an email to *nationaloffice@wia.org.au*

Support the organisation supporting your hobby - Encourage someone new to join the WIA today

Silent Key **Walter McInnes Dempsey VK3WD – SK:** 17/05/1910 – 30/07/2010

Wal gained his Amateur Operators Certificate of Proficiency in Radio & Telegraphy on 25 May, 1929, and was allocated the callsign of VK3WD.

He set up his radio shack at his family's house amidst the market gardens in Centre Dandenong Road, Cheltenham. By 1930 he was regularly broadcasting music on a Sunday on 200 metres. He had reports from listeners from all states.

He was self taught and to ensure he hadn't missed learning some topic he took leave from the PMG in 1931 and undertook study and formal exams at the Marconi School of Wireless in Sydney. Others studying at the school at that time included Hector Varnes VK2LW, Reg Reynolds VK2RH (Hector's uncle) and Con Bishop VK2LZ.

Leaving school at fourteen with his Merit Certificate, Wal joined the PMG. He worked at Mentone and Cheltenham post offices, with a stint in Ballarat until he joined the newly created Department of Civil Aviation in1939, as an Aeradio Officer, and was quickly posted to Oodnadatta. Postings to other remote locations followed; Karumba, a flying boat stop-over and Daly Waters. As military forces came south, DCA officers were ousted from their quarters to the airstrip at Daly Waters where the tractor shed became both sleeping quarters and radio room. The tractor shed has been recreated at the Airways Museum at Essendon.

Whilst at Karumba, Wal became engaged to Mary, whom he'd left in Ballarat. They were married in 1942 when Wal managed to get a posting to Essendon Aerodrome. In 1944 Wal, with Mary and young baby relocated to Cambridge, Tasmania as Officer-In-Charge.

With war's end Wal obtained the call sign VK7WD. Here began the ritual of building a shack and setting up an aerial which was repeated in later years at Pascoe Vale, Oak Park and, finally, Marong.

On returning to Melbourne in 1951, Wal had to wait until VK3WD was again allocated to him. With a growing family and shift work, holiday trips were the only time for amateur radio. Wal and Mary loved these outback trips which covered the whole of the country over many years. Each day he called into the Travellers Net to give his location and where they would be over-nighting.

Wal retired from DCA in 1975 and moved to Marong, near Bendigo. In the shack at Marong Wal kept learning, designing and building projects to master the newest technology. Not every project got finished!

After nearly 66 years of marriage and dedication to each other, Mary passed away in 2008. In the last few years Wal loved reading AR and the RAOTC magazine. He enjoyed reminiscing about the old days with his family. He had a photograph of his shack in Centre Dandenong Road in the 1930's with QSL cards pinned to the wall. Wal kept those cards, which were recently found and put in an album. He would go through them and remember the QSO and the operator's name.

Wal celebrated his 100th birthday on 17 May, 2010 with a gathering of family and friends, with lots of memorabilia and stories of his life, and to which Wal added his recollection and responded wonderfully.

Wal passed away at the Austin Hospital on 30 July, 2010.

Contributed by his son Peter Dempsey VK3YIM

VK3news Amateur Radio Victoria News

Jim Linton VK3PC
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Centre Victoria RadioFest

An enormous behind the scenes voluntary effort goes into staging lots of community activities, including the major amateur radio event at the Kyneton Racecourse on Sunday 13 February.

First held in 2007, the volunteers at the end of that day were exhausted, but had a sense of achievement in making a contribution to bring something new and long overdue to Victoria.

This year the Organis ng Committee plus others in support roles began their tasks in early September to rapidly create an interesting program so publicity could begin.

An interesting program of mini-lecture presentations will include the DX0DX DXpedition, IARU Region 3 ARDF Championships coming to Victoria, Optical Communications by leading exponent Rex Moncur VK7MO and Kite Antennas with Tino Pavic VK3EGN.

Increasingly important around the world is the role that radio amateurs can play in times of natural disasters and emergency communicat ons will be on show with both WICEN (Vic) and Red Cross Emergency Communications RECOM.

Those wanting to book a table or car-boot sales space should do so without delay by contacting Tony Hambling VK3VTH 0423 635 152. Anyone arriving without a booking, and if a space is available, must pay a $5 surcharge. Indications are that there will be an interesting variety of items on offer.

The Club Corner Precinct is an opportunity for clubs, groups and the Wireless Institute of Australia to put on a display about their activities and promote these to the wider amateur radio community.

The Scout Radio and Electronics Service Unit will have a wonderful display and run a come 'n try sniffer activity that complements the mini-lecture about the ARDF championships.

The Kyneton Racecourse is an easy to reach venue that is mostly undercover, with plenty of free car parking, hot breakfast available before it opens at 10 am with tickets on sale from 9 am.

Do not miss this major event and great social occasion for everyone with an interest in radio communications. Ready to help you maximise your participation are volunteers from Amateur Radio Victoria and the Central Goldfields Amateur Radio Club.

National Parks Award

The rules for the Keith Roget Memorial National Parks Award have been updated following the declaration of new parks taking the total to 45, an increase of 10 since the award was revived in 2008.

A full list of the National Parks and the rules are in the award section of the Amateur Radio Victoria website. A Basic Award requires 15 points, with each contact with or from a National Park worth one point.

Special endorsements are available including for 25 points and all 45 parks. Tony Hambling VK3VTH has activated ten parks and will nearly double that number in March while he is in eastern Victoria.

From March 5-7 Croajingolong National Park, Gippsland, 8 March Alfred National Park, 9 March Coopracambra National Park, 10 March Lind National Park, 11 March Erinundra National Park, 12 March (return) Croajingolong National Park, 13-14 March (two nights) Snowy River National Park, 15 March Alpine National Park (two hours only), 16/17 March (two nights) Burrowa-Pine Mountain National Park, 19 March Chiltern-Mt Pilot National Park (1200-1800 local time JMMNFD), 29 March Warby-Ovens National Park (1300-1500 local time approximately).

Please listen out for and give Tony VK3VTH a contact from these parks while also contributing to your own log towards the Keith Roget Memorial National Parks Award.

History of VK3MT

Research is underway to find out as much as possible about the history of VK3MT, which is the callsign of the radio club of the RMIT University. So far an early listing of it has been found in the 1930 book "The all electric receiver" by Geoffery G Thompson VK3GT.

When founded the now major education institut on was ca led the Melbourne Working Men's College and that was how it was recorded in that list of experimental stat ons. Perhaps there is a listing of VK3MT earlier than 1930, or maybe that is when it actually began?

Michael Van den Acker VK3GHM (mike.vda@rmit.edu.au) would l ke to hear from anyone who has information or knowledge about VK3MT, its history and activities over the years.

Standard Licence bridging course

A limited number of vacancies remain in this quality training opportunity for Foundation licence holders to take the next step up to the Standard licence.

Instructor Kevin Luxford VK3DAP will deliver the targeted course on Wednesday evenings 23 February, 2, 9, 16 and 23 March, plus a revision session Saturday 26 March. Written theory and regulations assessments are available on Sunday 27 March.

The train ng covers the theory subjects needed to bridge the gap n knowledge between the Foundation and Standard syllabus. A number of these have been run over the past four years and proved to be highly successful. It does require those enrolled to attend on every class evening, revise and self-study in between classes.

If you are interested in obtaining more information and to enrol, please contact Barry Robinson VK3PV 0428 516 001 or emai vk3pv@amateurradio.com.au

Membership inquiries

To join and support the state-wide organisation Amateur Radio Victoria costs $30 for Full or Associate membership and $25 Concession, for two years. New members are most welcome and an application form can be found on our website or posted out on request. The office at 40g Victory Boulevard Ashburton reopens after the summer holiday break on Tuesday 15 February.

A non-kinky slinky antenna – with a 1:1 balun

Raffy Shammay VK2RF and Allan Hirschel VK2VEC

Allan VK2VEC and I decided to make a couple of slinky antennas that were portable, and so the spring-like arms did not flop around and tangle in storage. After construction, the antenna plus balun ended up weighing 665 grams.

We thought it might be helpful for other hams to have these notes. The antenna is a great portable, compact dipole. It is particularly useful for operating from restricted spaces like balconies, or inside a room.

Here are our construction notes.

Making the 1:1 balun

1 Fold 1.2 metres of No14 AWG enamelled copper wire in half, and wind the folded wire for ten turns on a T130-6 toroid. Leave 60 mm of wire free of the toroid on each of the wire ends. Separate the 10 turns from each other so that they are equidistant from each other. Ensure the wire is tightly wound against the toroid.

2 Make the folded end of the wire face in one direction, and the open end (two wires) 180 degrees from the folded end.

3 Cut the wire at the fold. Scrape some enamel off about 10 mm of each of the four wire ends and tin. Refer Photo 1.

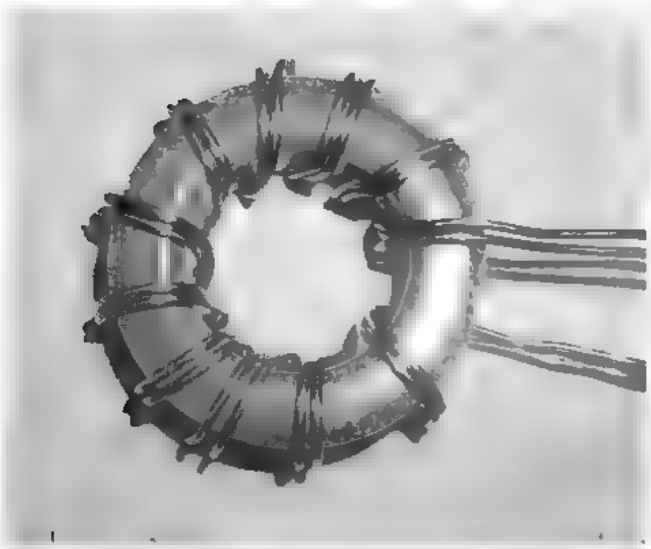

Photo 1: The completed balun.

4 At one of the box ends, drill a guide hole at about 15 mm above the box base, and centred left to right. Using this guide hole, drill or nibble a hole of about 16 mm diameter, with the guide hole at the centre.

5 Use the SO-239 socket

6 Push the SO-239 socket from the inside of the hole, and drill four holes for the panel bolts.

7 Fit the completed toroid into the jiffy box, fit the panel mount SO-239 and fit the panel bolts and screw on the retaining nuts.

8 Solder one wire to the centre of the SO-239. Twist the other wire from the same end of the toroid under one of the panel bolt nuts. You could solder this point, but be careful not to apply too much heat continuously otherwise you will melt the box. Alternatively, solder an eye tag on to the lead and thread onto the bolt before tightening the nut.

9 Make two small holes in the end opposite the side to the socket, sufficient to poke the two remaining wires through. These will be soldered directly to the slinky, so make the holes 15 mm apart. These holes will also be used to thread a cable tie through for strain relief, so make it sufficiently large, say 2 mm diameter.

10 Poke the wires through the hole, and if you have some spaghetti for insulation, sheath the wires, leaving enough free to solder to the slinky. Screw the box lid on but so you can remove it easily later to fit the strain relief cable tie.

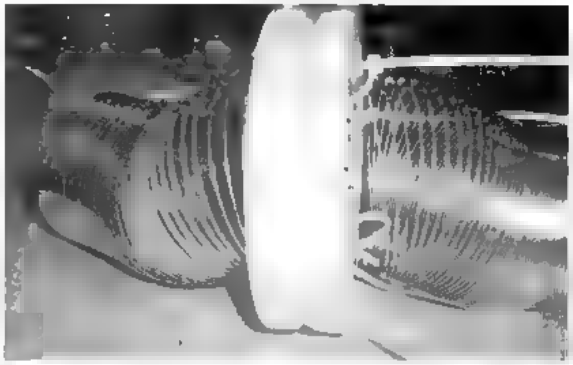

Photo 2: Attaching the slinkys to the lids using cable ties.

Making the antenna

1 Put the two plastic container screw lids back to back,

2 You need to make eight holes around the inside of the lid, such that when you place the slinky in, each of two holes allow a cable tie to hold both slinkies in place in the lid. Our lids had a convenient circle in the plastic which matched the slinky circumference, so we could drill the cable tie holes first, four on one side of the circle, and four on the other. We used a bit of double sided sticky foam tape to hold the lids together so they didn't wander whilst drilling.

3 Grind or file one end of each slinky to permit solder to stick.

4 Feed the free wires of the balun to reach each slinky when attached.

5 Scrape the enamel off the free end of the balun wires.

6 Solder the free balun wire ends each to one slinky.

7 Attach both slinkys to the lids using the cable ties, but do not tighten the cable ties completely. Refer Photo 2.

8 Thread a cable tie through the wire holes in the balun's jiffy box and in between the two plastic screw lids, and around the cable tie in between the two wires attached to the slinkys.
9 Thread a cable tie through one of the other cable ties in between the lids, so that it forms a loop on top from which to hang the slinky on a mast or tree branch with rope or extra cord.
10 Tighten the slinky cable ties and snip off the excess plastic.
11 Using an Utilux crimp tool, crimp two 6.5 mm Utilux terminal eyes to the free ends of the two slinkies. This will be useful to tie up each slinky to the extended length you choose when operating.
12 Drill a hole sufficient to allow the twine or cord through the dead centre of the lids, and thread the 15 metres of cord through the hole.
Leave 7.5 metres per side and tie a knot on either side of the hole to fix it in place. Refer Photo 3.
13 In use, the cord should be tied off to the eye of each slinky to prevent the slinky being stretched more than about 2.3 metres either side, and to support the slinky when in the air.
14 We put a few drops of glue on the balun windings to ensure they remained in place.
15 To store, roll up the cord on each side and place within each slinky, and then screw the lids on. Refer Photo 4.

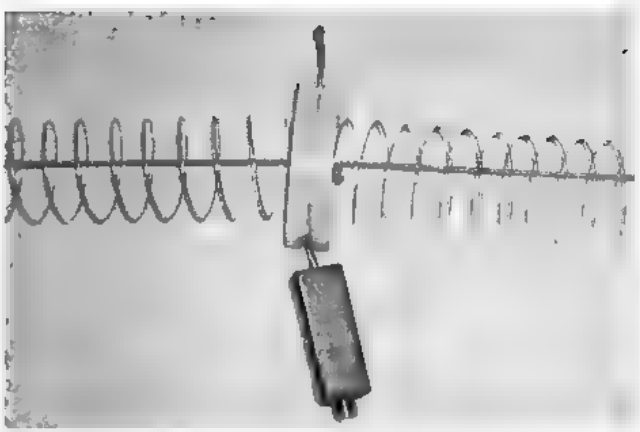

Photo 3. Fixing the cord each side of the lids.

Operating the antenna

Hang the slinky antenna from a mast, tree branch, or hook. Fit a coax feed line to the balun and the (antenna tuner and) radio. Extend each side of the antenna no more than about 2.3 metres. Tie that length to the eye at each slinky end with a knot, and use the remainder of the cord to tie the antenna to side supports. This prevents the slinky from being deformed by being stretched too much.

At about 2 – 2.3 metres, it should resonate on 40 metres. I (Raffy VK2RF) actually use an antenna tuner because when tuned, it will also radiate nicely on 20 metres, 15 metres and 10 metres.

I've also used it on 3.5 MHz with a tuner but I can't imagine it's very efficient.

Electrically the antenna is about 40.226 metres, but there are capacitance effects because of the slinky coils.

Beware

Do NOT stretch the slinky past about 5 metres. It does not work better and you will deform it.

Do NOT leave it outside for a more than a few weeks. It will rust. If you must use it outside for long, paint it to protect it, and put some silicon sealer on the holes in the jiffy box.

Further information about slinky antenna's http://www.qsl.net/kd4cga/slinky.htm

Tools used

Drill – small drill bits; knife; file; soldering iron and solder; thin heat shrink tubing; tape measure; sma screwdriver; 16 mm hole drill bit (or nibble tool or reamer); Utilux crimp tool; needle nose pliers.

Total cost will be something around $35, and less if a well stocked junkbox is available.

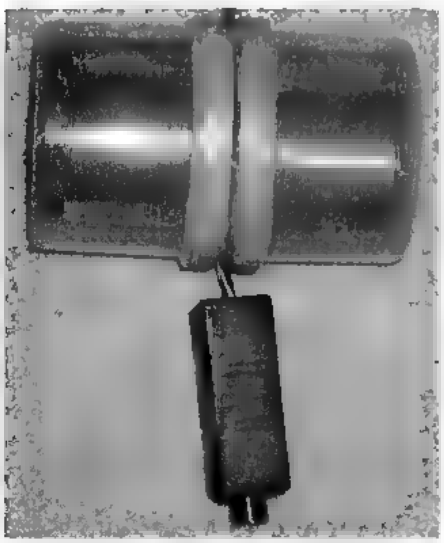

Photo 4: Storage of the cord with the slinkys, inside their plastic container.

Components

Metal slinky, 88 turns – 2 of	Toys Online Australia
450 ml round plastic screw-top container – 2 of	
14 AWG copper wire – about one metre	
Nylon cord – 15 metres – 10 of	Bunnings
Cable ties – 7 of	Dick Smith No H1980
Utilux automotive crimp eye terminal, inner diameter 6 mm, 10 pack – 2 of	Dick Smith No H3214
Torroid 130-6, in a three pack – 1 of	*http://www.kitsandparts.com/*
Jiffy box – 1 of	Jaycar HB6015 *http://www.jaycar.com.au*
Panel mount SO-239	Jaycar PS0686

Amateur LCD amended

The Australian Communications and Media Authority (the ACMA) has amended the Radiocommunications Licence Conditions (Amateur Licence) Determination No 1 of 1997 (the Amateur LCD) and the Radiocommunications (Overseas Amateurs Visiting Australia) Class Licence (the Class Licence).

In doing so, the ACMA has given effect to several matters first requested by the WIA in December 2008.

WRC-07 allocated the band 135.7 – 137.8 kHz to the amateur service on a secondary basis in most parts of the world, including Australia.

To date, Advanced licensees have been able to operate on this band only if they had obtained a variation of their licence conditions.

Now all Advanced amateurs may operate on the band 135.7 – 137.8 kHz, subject to conditions including the condition "If a licensee operates an amateur advanced station in the frequency band 135.7 kHz to 137.8 kHz, the licensee must not operate the station using a radiated power of more than 1 watt pX EIRP".

Previously section 42 of the Amateur LCD (part of the conditions of a repeater licence) required the originating station to use what was called an "access control system", which is defined to be either a tone burst system that has a frequency of 1750 Hz, or a continuous tone coded squelch system or a dual tone multi frequency system if the output frequency was different from the input frequency.

The WIA argued that such access control systems were not appropriate with current digital technology protocols used by amateurs, such as the D-STAR system. In that system, the transmitter has to be specifically programmed to determine the output frequency band of the digital repeater.

The Amending Determination now adds as an access control system any system that "uses any other readily available code or signal".

A further matter raised by the WIA was that the Class Licence by Section 11 (1) provided that "An amateur station must not be operated unless a qualified person operating the station identifies the station by use of the callsign, mentioned in subsection 6 (2), followed by the suffix VK" and that was inconsistent with CEPT Recommendation T/R 61-01 and was an exception to the way in which amateur callsigns are constructed under s milar arrangements

The WIA pointed out that T/R 61-01 provides that "When transmitting in the visited country the licence holder must use his national call sign preceded by the call sign prefix of the visited country as indicated in Appendices II and IV. The call sign prefix and the national call sign must be separated by the character "/" (telegraphy) or the word "stroke" (telephony)."

Subsection 11 (1) of the Class Licence has been amended to read "An amateur station must not be operated unless a qualified person operating the station identifies the station by using the call sign mentioned in paragraph section 6 (2) (e) preceded by the letters VK."

In addition to these changes requested by the WIA, a number of other changes are made, mainly of a technical nature, for example substituting "the ACMA" for "ACMA" and rectifying some omissions.

More significantly, section 5 (3) of the Amateur LCD had provided that "The licensee must not transmit messages to an amateur station in a foreign country if ACMA has published a notice in the Gazette to the effect that the government of that country has given notice that it objects to the transmission and reception of messages between amateur stations in that country and amateur stations outside that country."

That provision has been deleted and a new provision inserted as follows "The licensee must not transmit a message to an amateur station in a foreign country if the transmission would be inconsistent with the Australian table of allocations in the spectrum plan or a footnote to that table."

The term "spectrum plan" is defined to mean "the Australian Radiofrequency Spectrum Plan 2009".

While the WIA has supported all the amendments, it has expressed its reservation about the poss bility that the term "inconsistent" in the context of the spectrum p an may lead to unintended consequences.

The other changes to the Class Licence simply reflect the changes to the Amateur LCD.

At present the amendments are available as separate documents, and the primary documents have not been consolidated to incorporate the changes.

When the Class Licence and the Amateur LCD consolidated versions become available they will be placed on the WIA website.

VK2news

Tim Mills VK2ZTM
vk2ztm@wia.org.au

Best wishes for 2011. This is the big month in VK2 with the annual **Central Coast Hamfest** staged by the **Central Coast ARC** at the Wyong Racecourse on Sunday 27 February. Gates will open early, giving time to check out the Flea Market before the Trader section opens. There will also be both an early and later start for the exam assessments provided again this year by ARNSW – prior bookings would help – contact 02 9651 1490. No details were available for the Saturday night dinner as these notes were prepared but for all activities in conjunction with the field day listen to VK2WI News during the month or check out their web sites. The first VK2 field day for the year was the Mid North Coast Expo, just concluded at Coffs Harbour.

Several clubs will have their first meetings for the year this month. **HADARC** resume the informal gathering on the 9th and the monthly on the 23rd. They plan to have a table at Wyong. **Waverley ARS** has a training course at their Rose Bay club room over the weekend 12/13. Contact via *education@vk2bv.org* **VK2AWX** news net resumes on Monday the 7th to advise about the first **Hunter Radio Group** meeting on the 11th. **Manly Warringah RS** have assessments scheduled this month. They have a Youth Grant for anyone under 18 who would like to become an amateur. For either, contact Chris VK2YY at *vk2yychris@gmail.com* or on 0428 239 413. **Orange & District ARC** is seeking a new meeting venue. All clubs and groups may make use of the VK2WI news service to advise members and visitors of meetings and activities. Send off an email to *news@arnsw.org.au* This location provides an automated acknowledgement.

The **Oxley Region ARC** who are celebrating their 40th year, advise that their 36th annual field day will be on the June long weekend 11/12. At a different venue this year: the Tacking Point Surf Club due to a major sporting event in town over the weekend having booked the Sea Scout hall. Those needing accommodation should book it now. Oxley has a new EchoLink system. The former one, provided by Chris VK2CJM, closed early December.

It has been replaced by one provided by Bill VK2ZCW. Thanks to both for the service. The new node number is 553 696, again on repeater VK2RPM 146.700 MHz.

There are to be the RTO based Emergency Communication Operators Training workshops in VK2 over two full weekends, the first this month and the second in April.

Jeff VK2BYY who spends some of his time being an author has just completed the fourth in his **Barefoot Times** series. The latest, 'Cry of the Bunyips', is scheduled for release later this year.

The **VK2BWI** Morse training session provided by Ross VK2ER out of Orange is resuming after a break over January. Ross provides the weekly transmission for ARNSW on Thursday at 2000 hours on 3550 kHz. He would welcome others to assist in providing this service. The transmission facility at **VK2WI** has recently had a new 23 cm repeater system installed, replacing a pair of Yaesu transceivers donated by DSE in 1989. The new system was built up by station engineer Mark VK2XOF. Work is proceeding with a new transmitter for the 160 metre broadcast. New antennas are being prepared for some of the VK2RSY beacons. The packet system at the VK2WI site was decommissioned late last year. The next Trash & Treasure at VK2WI is scheduled for Sunday 27 March.

ARNSW is scheduled to hold their AGM in April and there will be a call for nominations for the committee towards the end of this month. Details via VK2WI broadcasts or on the web site www.arnsw.org.au As part of the Centenary year, ARNSW has been issuing certificates to their current members who have 40 or more years membership, first as members of the NSW Division and then as members of ARNSW. There are a few gaps in the records so if you have not received a certificate and would like one, contact Brian VK2WBK by a telephone call to the message bank on 02 9651 1490, or 0400 445 829. Email to *office@arnsw.org.au* or mail to P. O. Box 6044 Dural Delivery Centre NSW 2158.

73
Tim VK2ZTM

Silent Key Alf Wachsmann VK7LAW

Sadly, Alf VK7LAW became a silent key on Saturday 27 December. He is survived by his loving wife Hilda plus a son and daughter. A private funeral was held on his property at Diddleum Plains, which was attended by Joe VK7JG, Allen VK7AN and Barry VK7BE. Another gentleman of the airwaves passes on.

Vale, Alf VK7LAW.

Jason VK7ZJA

ALARAnews

Margaret Blight VK3FMAB – Publicity Officer

Well, after taking a deep breath, we now face the New Year of 2011. I wonder if it will be as full of life's ups and downs as last year! I do hope everyone enjoyed a happy and peaceful festive season and caught up with friends and loved ones.

Perhaps this year will bring some unexpected surprises, some of you may further your interest in radio by studying for an Advanced licence, or participating in your club's activities. Perhaps you will nominate for a position on your club's committee! Don't be shy. You may have more to offer than you think.

Trip to Adelaide

Last November, arrangements had been made for VK3VIP and her OM John VK3DQ, together with myself and OM Andrew VK3BFA, to visit Adelaide, to attend the Bring and Buy Sale held annually by "The Biggest Amateur Radio Club in South Australia" - Adelaide Hills Amateur Radio Society. We had a pleasant trip over to Adelaide due to beautiful weather and pleasant countryside. Everything was still green following the recent rain.

The VK5 ALARA members had kindly arranged a dinner to meet and greet the VK3 members on the Friday evening prior to the Sale. We all caught up at the Jetty Hotel, Glenelg, and enjoyed a good meal and great company. Marilyn VK3DMS with her husband Geoff attended as they were holidaying in SA for a few days. Also present were Pam VK3NK and her OM Graeme VK3NE who were visiting radio friends in Adelaide that weekend. There was much catching up on news and much delight at being able to speak with some people face-to-face for the first time. In other cases, it was the simple enjoyment of speaking with people we had not seen since the ALARA MEET in Ulverstone, Tasmania, two years previously.

ALARA well represented at Adelaide Hills Buy & Sell.

Bring & Buy Sale

On Sunday we ventured to the Westbourne Park Memorial Hall, Wesbourne Park, to participate in the Buy & Sell Meet. There was quite a crowd waiting to be allowed into the main hall, in the meantime they could buy refreshments from the well named "ALARA Coffee Lounge". Naturally, when the doors finally opened there was a surge forward from the menfolk and the women took the opportunity to go into the side hall where the VK5 ALARA members were busy providing, drinks, muffins & cakes etc.

The Meet was formally opened by Michael Owen who spoke about the enthusiastic response to the VK100WIA Centenary callsign and his hope that membership growth may be encouraged.

Peter Wolfenden also gave a most interesting presentation on the History of Wireless in Australia.

Adelaide is a delightful place to visit, with the city set in beautiful park surroundings. There are many interesting places to explore nearby and we undertook a trip to Strathalbyn on Sunday afternoon. There we found ourselves meeting up unexpectedly with the group of radio friends from VK3 who had been at the dinner and enjoyed afternoon tea together.

Casual meeting in Strathalbyn of VK3 visitors.

VK3FMAB presents History of ALARA.

It was with some regret that we set off for home on Monday but were mindful that we will return again for the ALARA International MEET in 2012. This will be held in Glenelg, South Australia. We look forward to that important event.

Presentation on ALARA

The Eastern & Mountain District Radio Club (EMDRC) invited Margaret VK3FMAB and Jean VK3VIP to give a talk to club members about ALARA. Jean VK3VIP spoke about recent activities including interstate Meets, accompanied by a video projection showing numerous photographs illustrating the range of social and club field days involving ALARA members. Margaret VK3FMAB discussed the development of ALARA and described some of the pioneer women radio operators who were active in the early era of wireless.

From this initial interest grew a basis for the development of women's continuing involvement in radio especially post WWII. Eventually a movement was initiated towards establishing a group for woman operators, leading to the formation of LARA. This later developed into the Australian Ladies Radio Association upon affiliating with the WIA.

ALARA Christmas lunch

This year our travelling luncheon was held in the City of Bendigo. We are very aware that a number of ALARA members regularly travel down to Melbourne to meet up for a meal with fellow members. So to maintain the balance, we attempt to arrange some of the get-togethers in a location closer to country members.

We all met up at a delightful local hotel, The Old Boundary Hotel. A great choice as it happens, everyone enjoyed the environment and the food and presentation was first class. So despite the heavy rain, everyone had a jolly good time. The Kris Kringle presents were exchanged with much laughter. It was later pointed out that the lunch had extended for 3½ hours so there seems little doubt that everyone was enjoying themselves.

ALARA Christmas Luncheon Bendigo.

Is this a record?

The following news has been sent from Queensland *"Greeting from The Rockhampton and District Amateur Radio Club, the RADAR club. Here is something that may be a first for Queensland and perhaps Australia, a Diamond Wedding Anniversary for two lovely people, both open licence holders with a combined licence duration exceeding 90 years.*

On 7th December 2010, two long standing members of our club and the WIA celebrated their Diamond Wedding anniversary. Both are proud to advise they are 84 years young.

Gordon Adams VK4GM and his wife Mary VK4PZ were married at the Holy Trinity Church in Blackall in 1950, spending several years there before moving down the road to Jericho where they established a service station. In 1984 they shifted to the big smoke of Rockhampton, before settling at the Caves on a block of land in 1996 where they replanted their antenna farm, probably too conspicuous at their QTH in the developing city.

Gordon obtained his initial licence VK4ZGA in 1963 with Mary taking out a listener's licence in 1968. Mary laughingly explains that she was not theory minded as she calls it and took 10 years to gain her licence after Gordon. She finally dusted down her books and herself to complete a course. Proudly, Mary was one of four to be successful from an initial class intake of 54.

They have both been continuous members of the WIA since licensing and Mary has been a long standing member of ALARA. She attains 30 years of membership with ALARA in March 2011."

Congratulations and Best Wishes to the happy couple.

60th Anniversary RADAR Club VK4.

Amateur Radio Annual Index 2010

Don Jackson VK3DBB

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Hamads

WANTED – VIC

Yaesu two metre all mode transceiver, type FT-290RII, with PA type FL-2025, and tone unit type FTS-7, or any of the above units.
Call Brewster VK3YBW on 03 9527 2661 after 6.00 pm

FOR SALE – NSW

Henry Radio 2KD-5 linear amplifier, with operating manual, $700. One owner. Pick up only at QTHR.
Yaesu FT-4700RH 2 m/70 cm transceiver, S/N 8M180145, complete with mobile mounting bracket, mike and operating manual, $200. One owner. Pick up only at QTHR.
Shack clear out. Other items offered for viewing.
Les VK2RJ, email *les_baber@dodo.com.au* or phone 02 6543 1942.

Nally radio tower. Two years old, brand new, never installed, 13 metre, two stage, freestanding, telescopic, tiltover tower. Slab style, wind region A, with J Bolt assembly supplied. Also comes with antenna mounting pole, aluminium, by three metres, floating bearing and mounting plate with weather shield. Tower has integral rotator plate. Drawings and computations supplied.
Must sell as I can't get council approval for the installation, in the position I want to install it. The all up cost of the tower was $6371.81 Will sell it for $3995.00 ONO. Please note you must organize your own freight company if you are interstate. Any questions please call or email me, Steve VK2SPS, on 02 9456 0130 or 0415 559 784, or email *vk2sps@froggy.com.au*

WANTED – NSW

Command receiver 6 to 9 MHz. ARC-5 series BC-455, JAN R-27 or similar.
Also interested in other receivers, transmitters and components for this equipment.
Contact Les VK2ZPA, on 0417 487 930 or email *les.payne@bigpond.com*

Icom UT51 CTCSS board, fitted to old IC-3220E models.
Contact VK2GWL QTHR or phone 02 5599 2373.

FOR SALE – QLD

A dummy load, 20 watts dry and at least 50 watts with oil (no oil supplied).
Phone Errol VK4YEC on 07 4926 6924.

WANTED – QLD

A 10 watt TX/RX in GWO.
Phone Errol VK4YEC on 07 4926 6924.

The WIA publication 'The WIA Book' which was published in the mid 1970s. It's a small soft cover book containing articles from AR magazine. Either an original, or copy, or a loan for copying. Willing to pay.

Graeme Dowse VK4CAG. Please email me at *vk4cag@wia.org.au*.

A 10 watt TX/RX in good working condition is wanted. Please advise brand, price and other relevant details to M Deakin VK4DV, phone 07 4926 6924.

A serviceable LCD display module (Part No H-6WSJD00011) for my Japan Radio Company (JRC) JRC-245 transceiver. JRC no longer manufacture or support their amateur radio products. Therefore, my only hope lies with a used or unserviceable transceiver.
Contact Nick VK4YT QTHR or phone 07 4038 1731.

Information on the current state of experiments by amateurs who are flying unmanned aircraft with video/telemetry/other payloads is eagerly sought.
Please contact Steve VK4KHQ QTHR or at *vk4khq@ozemail.com.au*

FOR SALE – NORTHERN TERRITORY

Codan auto tune antenna, type 9350, plus S/S whip and spring. All cables and earth spare wheel bracket. Cost $600.00.
Contact Ken VK8FAAV, on 02 6557 8162.

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http://www.wia.org.au

The Amateur Service
... a radio communications service for the purpose of self training, intercommunication and technical investigation carried out by amateurs, that is, by duly authoised persons interested in radio tecnique with a personal aim and without any pecuniary interest.
56 ITU Radio Regulations

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Dominic Dahl VK2YDD
Timothy Mills VK2ZTM / VK2UJ
Gilbert Hughes VK1GH

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Noel Ferguson VK3FGN
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"Denotes nominated by the WIA Board ("Nominated Member")

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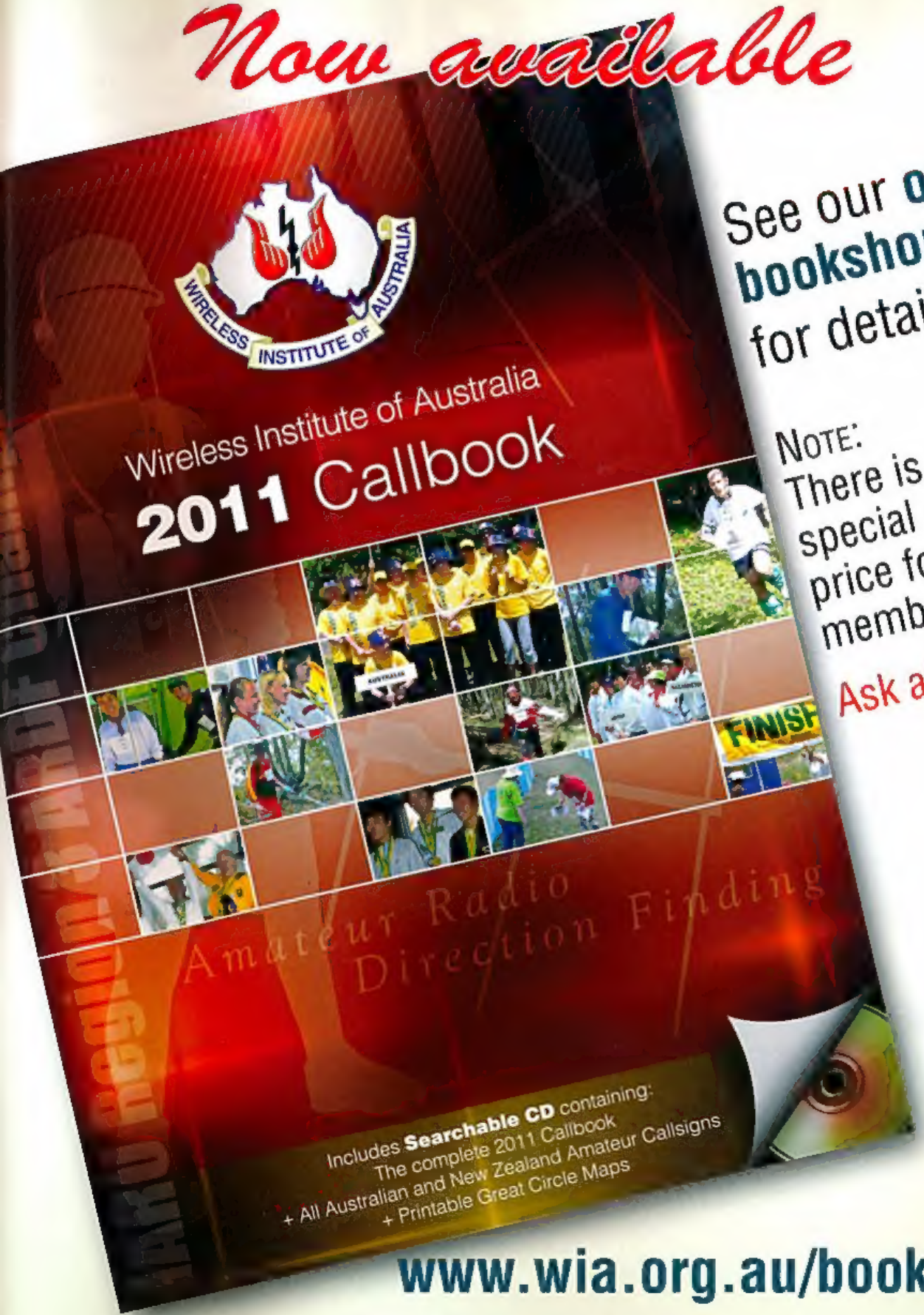

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